

Notice of Meeting

CITY COUNCIL WORK SESSION

Tuesday, March 4, 2025

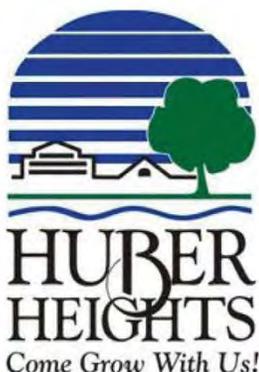
*at or about 6:00 p.m. at City Hall –
Council Chambers – 6131 Taylorsville Road*

Huber Heights Mayor Jeff Gore has scheduled a City Council Work Session to discuss:

- City Manager Report
- Parks And Recreation Board Update
- Tennis Court Resurfacing – Thomas Cloud Park – Solicit Bids
- Multi-Sport Court System – Community Park – Award Contract
- Disposal Of Surplus Vehicles – Police Division
- Janitorial Services – City Buildings – Award Contract
- Creekside Woods – Development Agreement
- Canal Heights TIF
- Kroger Aquatic Center Naming Rights
- Huber Heights Community Improvement Corporation (CIC)
- Economic Development Director Appointment
- WPAFB Compatibility Use Plan (CUP)
- Montgomery County Hazard Mitigation Plan
- Opposition Resolution – Tax Exempt Bonds For City Use
- City Code – Supplement 21 – Adopting Ordinance
- Board And Commission Appointments

Please Note:

The meeting will be viewable by the public on live stream available at www.hhoh.org



Distributed – February 26, 2025

For more information, visit www.hhoh.org



**CITY OF HUBER HEIGHTS
STATE OF OHIO**

City Council Work Session

**March 4, 2025
6:00 P.M.**

City Hall - Council Chambers - 6131 Taylorsville Road - Huber Heights, Ohio

1. **Call Meeting To Order/Roll Call**
2. **Approval Of Minutes**
 - A. February 18, 2025
 - B. February 26, 2025
3. **Work Session Topics Of Discussion**
 - A. City Manager Report
 - B. Parks And Recreation Board Update
 - C. Tennis Court Resurfacing - Thomas Cloud Park - Solicit Bids
 - D. Multi-Sport Court System - Community Park - Award Contract
 - E. Disposal Of Surplus Vehicles - Police Division

- F. Janitorial Services - City Buildings - Award Contract
- G. Creekside Woods - Development Agreement
- H. Canal Hights TIF
- I. Kroger Aquatic Center Naming Rights
- J. Huber Heights Community Improvement Plan (CIC)
- K. Economic Development Director - Appointment
- L. WPAFB Compatibility Use Plan (CUP)
- M. Montgomery County Hazard Mitigation Plan
- N. Opposition Resolution - Tax Exempt Bonds For City Use
- O. City Code - Supplement 21 - Adopting Ordinance
- P. Board And Commission Appointments
 - * Arts And Beautification Commission - Appointments
 - * Culture And Diversity Citizen Action Commission - Appointment

4. **Adjournment**

**CITY OF HUBER HEIGHTS
STATE OF OHIO**

Council Work Session Meeting Minutes

Name of Body: Council Work Session

Date: March 4, 2025

Time: 6:00 P.M.

Place: City Hall – 6131 Taylorsville Road – Council Chambers

Members Present:

Fred Aikens, Councilmember
Kate Baker, Councilmember
Nancy Byrge, Councilmember
Mark Campbell, Councilmember
Scott Davidson, Councilmember
Anita Kitchen, Councilmember
Brian Looney, Councilmember
Don Webb, Councilmember
Jeff Gore, Mayor

Others Present:

City Staff Present: Anthony Ashley, Mike Gray, Jason Antonick, Alex Zaharieff, Aaron Sorrell, John Russell, Christopher Conard, and Anthony Rodgers.

Topics Of Discussion:

- City Manager Report
- Parks And Recreation Board Update
- Tennis Court Resurfacing – Thomas Cloud Park – Solicit Bids

- Multi-Sport Court System – Community Park – Award Contract
- Disposal Of Surplus Vehicles – Police Division
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- Board And Commission Appointments

1. **Call Meeting To Order/Roll Call**

Mayor Jeff Gore convened the Council Work Session at 6:01 P.M.

Anthony Rodgers took Roll Call.

2. **Approval Of Minutes**

The following minutes were approved unanimously at the beginning of this meeting:

- February 18, 2025
- February 26, 2025

There were no changes or corrections to these minutes as submitted.

This Council Work Session was recorded by the City and the recording of this meeting will be posted to the City's website and will also be maintained by the City consistent with the City's records retention schedule.

3. **Work Session Topics Of Discussion**

City Manager Report

John Russell provided a PowerPoint presentation regarding the City Manager Report (see attached). He said the latest version of the City's E-Newsletter is available on the City's website and social media accounts. He said the YMCA At The Heights celebrated its 20th anniversary last week and he highlighted the great partnership between the YMCA and the City since its inception. He said Marble Slab Creamery/Great American Cookies held its grand opening and ribbon cutting ceremony today. John Russell said the City was able to purchase a new K9 Officer for the Police Division, Kolt, with Opioid Fund monies. He said K9 Kolt is in training and is expected to be in service in May, 2025. He said the Fire Division has been conducting a live fire training exercise on a building off of U.S. 40. He said the Huber Heights Tax Division is offering free assistance with City tax filing by appointment and e-file services for City taxes are also available.

John Russell answered questions from the City Council regarding items in the City Manager Report.

Parks And Recreation Board Update

Casey Taylor, Chair of the Parks and Recreation Board, distributed information regarding an update on the Parks and Recreation Board (see attached). She gave a PowerPoint presentation regarding the Parks and Recreation Board (see attached).

Richard Moore of the Parks and Recreation Board talked about the National Wildlife Federation's Mayors' Monarch Pledge. He said the program is intended to drive local governments to take action to save the monarch butterfly and other pollinators by creating and preserving pollinator habitats.

Mayor Jeff Gore said he was willing to support the Mayor's Monarch Pledge.

The City Council posed questions to Casey Taylor about the Parks and Recreation Board and expressed appreciation for the work of the Parks and Recreation Board.

Tennis Court Resurfacing – Thomas Cloud Park – Solicit Bids

Aaron Sorrell distributed information and proposed legislation to solicit bids for the repair and resurfacing of tennis courts at Thomas Cloud Park (see attached). He said the tennis courts at Thomas Cloud Park are in need of resurfacing and repair. He said the Parks and Recreation Department was awarded a \$5,000 grant from the U.S. Tennis Association (USTA) to assist with this work. He said this project will solicit bids to resurface four or more courts in the park as is planned for each year in the Capital Improvement Plan. Due to the grant stipulations, he said these tennis courts will be laid out for tennis only. He showed a picture of the current condition of the tennis courts at Thomas Cloud Park (see attached).

After discussion, the City Council agreed to recommend that the proposed legislation to solicit bids for the repair and resurfacing of tennis courts at Thomas Cloud Park be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Multi-Sport Court System – Community Park – Award Contract

Aaron Sorrell distributed information and proposed legislation to authorize the purchase and installation of a multi-sport court system at the Community Park basketball courts (see attached). He said the basketball courts at Community Park are in a state of disrepair and are in need of immediate repair due to deep cracks, multiple low-lying areas, and trip hazards from tennis post footers that were not removed properly. He said the multi-sport court modular system engineered by Sport Court and provided by Gamechanger Athletics provides a solution that avoids massive asphalt repair. He said this innovative system provides a top-of-the-line play experience with an attractive surface that

lasts 20 years or more on average. He said representatives of the Parks and Recreation Board recently took a field trip to Middletown, Ohio to see a Gamechanger Athletics court installation. He showed pictures of the current condition of the basketball courts at Community Park and the proposed multi-sport court at Community Park (see attached).

After discussion, the City Council agreed to recommend that the proposed legislation to authorize the purchase and installation of a multi-sport court system at the Community Park basketball courts be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Disposal Of Surplus Vehicles – Police Division

Anthony Ashley distributed information and proposed legislation to authorize disposal of surplus vehicles in the Police Division (see attached). He said authorize the disposal of surplus vehicles in the Police Division. He said these vehicles are the last vehicles owned by the City and the remaining vehicles are now all leased vehicles as part of the City's fleet management program.

After discussion, the City Council agreed to recommend that the proposed legislation to authorize disposal of surplus vehicles in the Police Division be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Janitorial Services – City Buildings – Award Contract

Mike Gray distributed information and proposed legislation to authorize a three-year contract and an option for a one-year extension for the provision of janitorial services for City buildings (see attached). He said this legislation is to authorize the award of a contract for janitorial services for City building, including the City Hall building, the Police Division building, the Senior Center building, the Richard F. Shomper City Governance Center building, the Huber Heights Community Center, the Montgomery County Municipal Court building, and 6428 Chambersburg Road.

After discussion, the City Council agreed to recommend that the proposed legislation to authorize a three-year contract and an option for a one-year extension for the provision of janitorial services for City buildings be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Creekside Woods – Development Agreement

Aaron Sorrell distributed information and proposed legislation to authorize the execution of a development agreement with GreyFoxCreekside, LLC for the Creekside Woods Development Project (see attached). He said this legislation authorizes the City Manager to execute a development agreement with GreyFoxCreekside LLC to develop a 159-unit, for-sale, townhome community near the terminus of Charlesgate Road. He said the development will be constructed in two phases. He said Phase One consists of 78 units and Phase Two will consist of 81 units. He said the anticipated average sales price is \$305,000 per home. He said the proposed development agreement authorizes the issuance of revenue bonds secured by the developer to offset a portion of the public infrastructure costs for mainly water and sewer utilities. Aaron Sorrell said the developer anticipates beginning construction in 2025 with Phase One completed by July, 2027 and Phase Two completed by December, 2028.

After discussion, the City Council agreed to recommend that the proposed legislation to authorize the execution of a development agreement with GreyFoxCreekside, LLC for the Creekside Woods Development Project be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Canal Heights TIF

Aaron Sorrell distributed information regarding a public hearing for the Canal Heights TIF (see attached). He said the City Council will hold a public hearing at the March 10, 2025 City Council Meeting to allow property owners within the proposed incentive districts for the Canal Heights TIF to comment and/or object to inclusion within the proposed

incentive districts. He said the two affected property owners within the proposed incentive districts were notified of the public hearing as required. He said no legislative action is required by the City Council.

After discussion, the City Council agreed to recommend that the public hearing for the Canal Heights TIF take place as scheduled at the March 10, 2025 City Council Meeting.

Kroger Aquatic Center – Naming Rights

Alex Zaharieff distributed information regarding a renewal of the naming rights agreement for the Kroger Aquatic Center (see attached). He said Kroger and City Staff have negotiated a renewal of the naming rights agreement for Kroger Aquatic Center with a slight increase. He said he was preparing legislation with the Law Director for Council approval.

After discussion, the City Council agreed to recommend that the necessary legislation to approve a renewal of the naming rights agreement for the Kroger Aquatic Center be prepared and placed on the agenda at the March 18, 2025 Council Work Session for further discussion

Huber Heights Community Improvement Corporation (CIC)

Christopher Conard distributed information regarding the Huber Heights Community Improvement Corporation (CIC) (see attached). He said recommended that Council appoint new members to the Huber Heights Community Improvement Corporation (CIC). He said the CIC is active and is current with all legally required filings in place. However, he said given City Staff and Council turnover, the City representatives on the CIC must be formally appointed by Council by a resolution. He said the CIC Code Of Regulations requires that at least three City representatives be appointed to the CIC Board. Historically, he said those representatives have been the City Manager, the Finance Director, and the Economic Development Director. In addition, he said the City has appointed a non-voting City Staff member to the CIC as the Executive Director. Christopher Conard recommended that Council appoint John Russell, Jim Bell, and Jason Antonick as voting members of the CIC Board and Alex Zaharieff as the CIC Executive Director. He said the current CIC Code Of Regulations also allows the appointment of a

minimum of three (3) CIC Board Members and up to a maximum of ten (10) CIC Board Members. He also recommended that the Mayor and one other Councilmember be appointed to the CIC Board. He said there are currently two (2) citizen CIC Board Members who are still active on the CIC Board, Pam Whited and Gary Swords.

After discussion, the City Council agreed to recommend that Mayor Jeff Gore and Mark Campbell would be the recommended members of the City Council to serve on the CIC.

After discussion, the City Council agreed to recommend that the necessary legislation to make appointments to the Huber Heights Community Improvement Corporation (CIC) Board be prepared and placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Economic Development Director Appointment

John Russell distributed information and proposed legislation to appoint Jason Antonick as the Economic Development Director (see attached). He said this legislation approves the appointment of Jason Antonick as the Economic Development Director for the City of Huber Heights.

Alex Zaharieff introduced Jason Antonick to the City Council.

After discussion, the City Council agreed to recommend that the proposed legislation to appoint Jason Antonick as the Economic Development Director be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

WPAFB Compatibility Use Plan (CUP)

Alex Zaharieff distributed information and proposed legislation to accept the Wright-Patterson Air Force Base (WPAFB) Compatibility Use Plan (CUP) and to endorse the implementation strategies identified in the CUP (see attached). He gave a PowerPoint presentation on the WPAFB CUP (see attached). He said the CUP is an update to the 1996 Wright-

Patterson AFB Joint Land Use Study (JLUS) and the result of a collaborative planning effort by the Wright-Patterson AFB Regional Council Of Governments and the Dayton Development Coalition, in collaboration with counties, townships, and municipalities; Wright-Patterson AFB; regional, state, and federal agencies; and other interested and affected stakeholders. He said the CUP was sponsored by the U.S. Department Of Defense Office Of Local Defense Community Cooperation with the primary goal of studying land use compatibility and developing strategies designed to safeguard the quality of life of community residents, the growth and economic development of the communities, and missions of WPAFB. He said the CUP contains recommendations for the implementation of strategies, policies, and actions intended to promote collaborative and compatible land use planning, minimize the impact of military operations on nearby communities, increase public awareness of military operations and other activities at WPAFB, and to prevent incompatible land uses and other community impacts to the WPAFB missions. He said the City of Huber Heights successfully secured the East Chambersburg Road Realignment Project in the Capital Improvements Program (CIP), ensuring funding and prioritization for this critical infrastructure upgrade. He said this project will realign New Carlisle Pike, connecting it with East Chambersburg Road near State Route 4 and State Route 235, providing an alternative route to alleviate congestion and enhance traffic flow. Alex Zaharieff said the improved roadway will create new commercial development opportunities near WPAFB, supporting economic growth while strengthening regional transportation. With this investment, he said Huber Heights is reinforcing its commitment to infrastructure and economic development that supports mission readiness and operational continuity. He said it is important to have this project listed in the plan and agreed upon by WPAFB and the Council Of Governments (COG) members, as this designation recognizes it as a regional priority. He said this recognition will also help secure grant funding for the project, ensuring the necessary resources are in place to support its successful completion.

After discussion, the City Council agreed to recommend that the proposed legislation to accept the Wright-Patterson Air Force Base Compatibility Use Plan (CUP) and to endorse the implementation strategies identified in the CUP be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency

legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Montgomery County Hazard Mitigation Plan

John Russell distributed information and proposed legislation to authorize continued participation in the Montgomery County Hazard Mitigation Plan (see attached). He said there is currently an agreement between the City of Huber Heights, Ohio and the Board Of Commissioners of Montgomery County, Ohio that Montgomery County, through its Office Of Emergency Management, shall provide emergency management assistance to the City in conjunction with a countywide coordinated program. He said this agreement requires the City to approve the 2024 Montgomery County Hazard Mitigation Plan.

After discussion, the City Council agreed to recommend that the proposed legislation to authorize continued participation in the Montgomery County Hazard Mitigation Plan be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

Opposition Resolution – Tax Exempt Bonds For City Use

Alex Zaharieff distributed information and proposed legislation to declare support for the preservation of the federal tax exemption of municipal bonds (see attached). He said the federal government has considered removing the tax exemption on municipal bonds to generate additional revenue, as taxing bond interest could bring in billions of dollars. He said the federal government has also argued that the exemption disproportionately benefits high-income investors while reducing potential federal tax income. He said the last time this issue was considered was during the Tax Cuts And Jobs Act (TCJA) of 2017; however, the provision to eliminate the exemption was not included in the final enacted legislation. He said City Staff strongly support preserving the federal tax exemption for municipal bonds, recognizing the vital role in funding essential infrastructure projects such as roads, bridges, utilities, water and sewer systems, and public facilities. He said these tax-exempt bonds enable the City to secure affordable financing, reducing borrowing costs and minimizing the financial burden on

residents. Without this exemption, he said borrowing would become significantly more expensive. He said City Staff recommend passing a resolution urging the Ohio Congressional Delegation to advocate for the continued protection of municipal bond tax exemptions, ensuring the City can maintain and expand critical infrastructure while fostering economic growth and community well-being.

After discussion, the City Council agreed to recommend that the proposed legislation to declare support for the preservation of the federal tax exemption of municipal bonds be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with adoption of the proposed legislation at the March 10, 2025 City Council Meeting.

City Code – Supplement 21 – Adopting Ordinance

Anthony Rodgers distributed information and proposed legislation to adopt Supplement 21 to the City Code (see attached). He said this ordinance is to adopt Supplement 21 to the City Code for the period of October 1, 2024 to December 31, 2024. He said appropriate legal notice of this ordinance has been advertised as required by the Huber Heights City Charter.

After discussion, the City Council agreed to recommend approval of the proposed legislation to adopt Supplement 21 to the City Code and requested that the proposed legislation be placed on the agenda at the March 10, 2025 City Council Meeting for a first reading as non-emergency legislation with the second reading and adoption of the legislation at the March 24, 2025 City Council Meeting.

Board And Commission Appointments

Anthony Rodgers distributed information regarding appointments to the Arts and Beautification Commission (see attached). He said it was the recommendation of the City's interview panel to appoint Melissa Gwinn and Mason Knickerbocker to the Arts and Beautification Commission for a term ending on June 30, 2028. He said background checks on Ms. Gwinn and Mr. Knickerbocker were processed by Human Resources.

After discussion, the City Council agreed to recommend approval of the appointment of Melissa Gwinn and Mason Knickerbocker to the Arts and Beautification Commission for a term ending on June 30, 2028 and requested that the necessary motion be prepared and placed on the agenda for approval at the March 10, 2025 City Council Meeting.

Anthony Rodgers distributed information regarding an appointment to the Culture and Diversity Citizen Action Commission (see attached). He said it was the recommendation of the City's interview panel to appoint Mia Honaker to the Culture and Diversity Citizen Action Commission for a term ending on December 31, 2027. He said a background check on Ms. Honaker was processed by Human Resources.

After discussion, the City Council agreed to recommend approval of the appointment of Mia Honaker to the Culture and Diversity Citizen Action Commission for a term ending on December 31, 2027 and requested that the necessary motion be prepared and placed on the agenda for approval at the March 10, 2025 City Council Meeting.

Mayor Jeff Gore said the City Council had recently conducted interviews for vacancies on the Planning Commission. He said it was the recommendation of the City Council to appoint Matthew Shomper and Larry Johnson to the Planning Commission to fill the two current vacancies.

After discussion, the City Council agreed to recommend approval of the appointment of Matthew Shomper and Larry Johnson to the Planning Commission and requested that the necessary motion be prepared and placed on the agenda for approval at the March 10, 2025 City Council Meeting.

Other Business

There was no other business conducted by the City Council at the Council Work Session.

4. **Adjournment**

Mayor Jeff Gore adjourned the Council Work Session at 7:30 P.M.

AI-10694

Topics Of Discussion A.

Council Work Session

Meeting Date: 03/04/2025

City Manager Report

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: SmartBoard **Legal Review:** Not Needed

Emergency Legislation?: No **Motion/Ordinance/Resolution No.:** N/A

Agenda Item Description or Legislation Title

City Manager Report

Purpose and Background

A copy of the presentation given with the City Manager Report has been attached (see attached).

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

City Manager Report

Huber Heights City Council

March 4, 2025

Huber Heights – E-Newsletter Online NOW!



NEWSLETTER



CONTACT US

City Hall 937.233-2300
Fire Division
Non-Emergency 937.233-2300
Police Division
Non-Emergency 937.233-2300
Veolia (Water) 937.233-2300
Republic Services . . 937.233-2300
www.hhoh.org



Huber Heights – YMCA at The Heights



Huber Heights – Grand Opening



Huber Heights – HHPD – New K9



- Ofc Hupp and “Kolt”
- Will be in service in May 2025
- Purchased with Opioid Fund Money

Huber Heights – HHFD – Live Fire Training



Huber Heights Division of Tax



**CALL TODAY TO SCHEDULE
YOUR TAX APPOINTMENT
(937) 237-2976**



- Free assistance with filing city taxes – BY APPOINTMENT ONLY
- E-File is quick and easy please visit our website for easy-to-follow instructions
- [E-File | Huber Heights, OH](#)



Questions??



AI-10698

Topics Of Discussion B.

Council Work Session

Meeting Date: 03/04/2025

Parks And Recreation Board Update

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: None **Legal Review:** Not Needed

Emergency Legislation?: No **Motion/Ordinance/
Resolution No.:** N/A

Agenda Item Description or Legislation Title

Parks And Recreation Board Update

Purpose and Background

Representatives of the Parks and Recreation Board will give an update presentation on the activities and work of the Parks and Recreation Board.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

No file(s) attached.

YMCA UPDATE

- ▶ 8,299 enrollments in programs, special events, and community events
- ▶ Aquatics had 2,038 children and adults learn to swim
- ▶ 3,177 youth participated in sports, gymnastics or fencing
- ▶ Over 271,600 visits to the facility
- ▶ 650 youth enrolled in winter sports, swim lessons have seen growth
- ▶ 15,192 members as of 2/24/25
- ▶ First collaborative event held on 2/21/25 at the Senior Center. 39 members showed up to play trivia, the YMCA provided lunch

BOARD SPONSORED ACTIVITIES FOR 2025

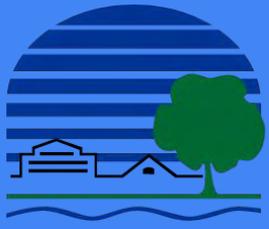
- ▶ April 5 - Annual Plant/Tree Giveaway
- ▶ April 25 - Heritage Tree Program Kick-Off
- ▶ May 3 - Teen Pickleball Clinic and Tournament
- ▶ May 9 - Doubles Pickleball Tournament, 50+
- ▶ May 10 - Doubles Pickleball Tournament, 18+
- ▶ June 10 - Youth Field Day at Community Park
- ▶ June 13 - King & Queen Pickleball Tournament, 50+
- ▶ June 14 - King & Queen Pickleball Tournament, 18+
- ▶ July 11 - Little Mermen (Summer Concert Series)

- ▶ March 20th Meeting: Discussion of Department and YMCA summer programs
 - ▶ (Daycamps, Movies, Concerts, etc.)

PROJECT UPDATE

Multisport Court @ Community Park

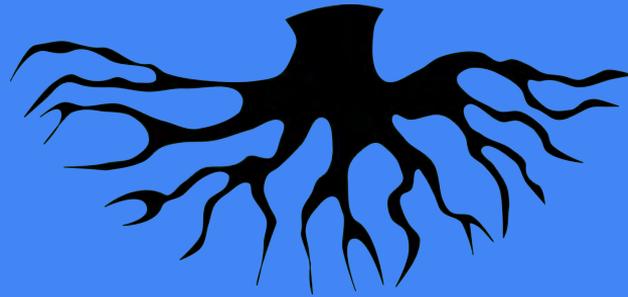




HUBER
HEIGHTS
Come Grow With Us!

The Roots of Our Community

*Connecting the Community to our Parks and
History Through Plants*





Huber Heights Tree & Plant Giveaway

Why: Beautify city with native plants

What: Free native trees/shrubs/perennials provided to residents

How/When (Annually):

- Residents order plants → TBD
- Plant giveaway → 5 April 2025

Cost: \$2500 (budgeted)





Huber Heights Heritage Tree Program - New!

Why: Promote appreciation and preservation of existing trees

What: Award program to recognize exceptional trees

How/When (Annually):

- Application Process: Arbor Day → July 4
- Tree Committee Evaluation: July 4 → Labor Day
- Winners (3) announced: Labor Day → Halloween

Cost: ~\$100 (not budgeted)





America 250 - Huber Heights Heritage Tree Project

Why: Promote connection between trees and our community's history as part of celebrating Ohio's contributions to the U.S. 250th Anniversary in 2026

What: Tree plantings, story telling, engaging schools

How/When (Once):

- Apr-Sep 2025: project planning, collecting stories, partnering w/schools
- Oct 2025-Mar 2026: material acquisition (plaques, trees)
- Apr-Jul 2026: plantings, celebrations, story telling

Cost: Cost-share w/state grant (\$5K from grant, \$3K from city-budgeted)

Mayors' Monarch Pledge

Why: Promote conservation of monarchs and other pollinators

What: NWF program w/600 mayors supporting

How/When (annual):

- Dec-Mar: Take the pledge/specify actions (min 3 of 30)
- Mar-Oct: Do actions
- Nov-Dec: Report progress

Cost: none



Recommend Council Approve Mayor (or Designee) Signing Mayor's Monarch Pledge by 31 March

AI-10661

Topics Of Discussion C.

Council Work Session

Meeting Date: 03/04/2025

Tennis Court Resurfacing - Thomas Cloud Park - Solicit Bids

Submitted By: Sarah Forsythe

Department: Assistant City Manager - Public Services

Council Committee Review?: Council Work Session

Division: Parks/Recreation

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Tennis Court Resurfacing - Thomas Cloud Park - Solicit Bids

Purpose and Background

The tennis courts at Thomas A. Cloud Memorial Park are in need of resurfacing and repair. The Parks and Recreation Department was awarded a \$5,000 grant from the U.S. Tennis Association (USTA) to assist with this work. This project will solicit bids to resurface four or more courts in the park as is planned for each year in the Capital Improvement Plan (Plan). Due to the grant stipulations, these tennis courts will be laid out for tennis only.

Fiscal Impact

Source of Funds: Parks And Recreation Capital Fund/Grant Funds

Cost: \$100,000

Recurring Cost? (Yes/No): No

Funds Available in Current Budget? (Yes/No): Yes

Financial Implications:

\$100,000 has been allocated in the Capital Improvement Budget for tennis court resurfacing which includes the \$5,000 USTA grant.

Attachments

Resolution

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

AUTHORIZING THE CITY MANAGER TO SOLICIT BIDS FOR THE REPAIR AND RESURFACING OF TENNIS COURTS AT THOMAS A. CLOUD MEMORIAL PARK.

WHEREAS, the City of Huber Heights owns and operates tennis courts at Thomas A. Cloud Memorial Park; and

WHEREAS, Thomas A. Cloud Memorial Park experiences a high volume of patronage seeking recreation opportunities, including local tennis teams and social groups; and

WHEREAS, the City desires to provide quality sports facilities to meet the needs of the community.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The City Manager is hereby authorized to solicit bids for the repair and resurfacing of the Thomas A. Cloud Memorial Park tennis courts in an amount not to exceed \$100,000.00.

Section 2. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 3. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date



Contractor will assist in identifying which courts are most in need.

Current Tennis Courts at Cloud Park

AI-10662

Topics Of Discussion D.

Council Work Session

Meeting Date: 03/04/2025

Multi-Sport Court System - Community Park - Award Contract

Submitted By: Sarah Forsythe

Department: Assistant City Manager - Public Services

Council Committee Review?: Council Work Session

Division: Parks/Recreation

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Multi-Sport Court System - Community Park - Award Contract

Purpose and Background

The basketball courts at Community Park are in a state of disrepair. The basketball courts are in need of immediate repair due to deep cracks, multiple low-lying areas, and trip hazards from tennis post footers that were not removed properly. The multi-sport court modular system engineered by Sport Court and provided by Gamechanger Athletics provides a solution that avoids massive asphalt repair. This innovative system provides a top-of-the-line play experience with an attractive surface that lasts 20 years or more on average. Representatives of the Parks and Recreation Board recently took a field trip to Middletown, Ohio to see a Gamechanger Athletics court installation. After playing a few rounds of pickleball and basketball, these representatives agreed with the Parks Manager's assessment that the Sport Court surfacing would suit Community Park well.

Fiscal Impact

Source of Funds: Parks And Recreation Capital Fund

Cost: \$220,000

Recurring Cost? (Yes/No): No

Funds Available in Current Budget? (Yes/No): Yes

Financial Implications:

Attachments

Picture 1

Picture 2

Resolution

Exhibit A





CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

AUTHORIZING THE PURCHASE AND INSTALLATION OF A MULTI-SPORT COURT SYSTEM AT THE COMMUNITY PARK BASKETBALL COURTS AND WAIVING THE COMPETITIVE BIDDING REQUIREMENTS.

WHEREAS, the City of Huber Heights owns and operates basketball courts at Community Park; and

WHEREAS, the basketball courts at Community Park have fallen into a state of disrepair that would require substantial asphalt and resurfacing work to pave a traditional court; and

WHEREAS, Gamechanger Athletics is the regional dealer of Sport Court products which provide quality multi-sport modular surfacing as an alternative to traditionally paved courts; and

WHEREAS, Gamechanger Athletics is a member of the cooperative purchasing agreement known as Sourcewell, guaranteeing competitive pricing to the City of Huber Heights.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The City Manager, or his designee, is hereby authorized and directed to engage Gamechanger Athletics for the purchase and installation of a multi-sport system at the Community Park basketball courts, which is conceptually represented and attached hereto as Exhibit A. Such authorization includes the execution of any and all documents necessary to accomplish this directive.

Section 2. Consistent with Section 171.12(b) of the Codified Ordinances of Huber Heights, the competitive bidding requirements are hereby waived.

Section 3. The City Manager's scope and authority as noted above shall be based on the following budgetary not to exceed limitations:

- Sport Court System: \$200,000.00
- Contingency: \$20,000.00

Section 4. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 5. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

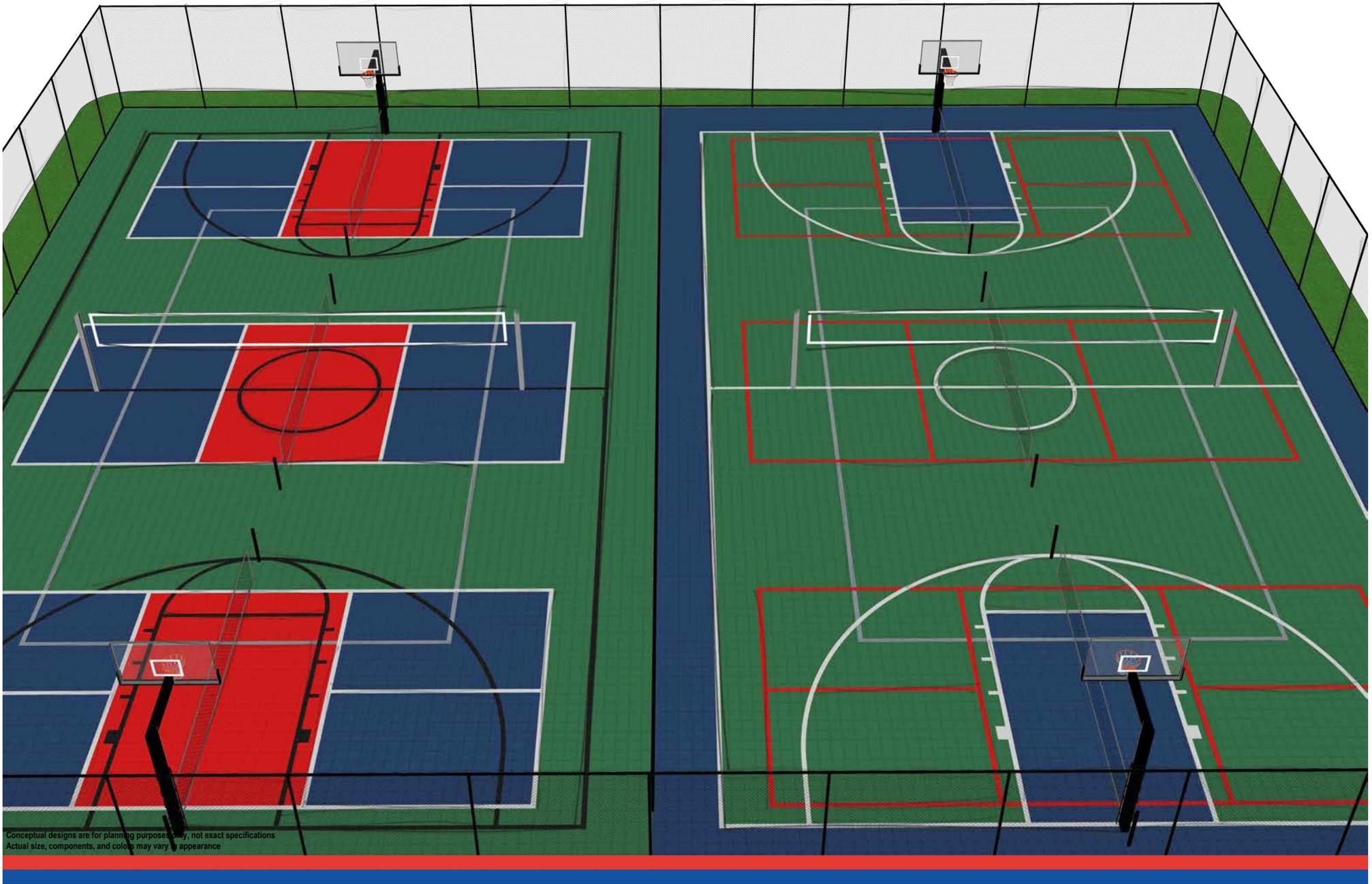
AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

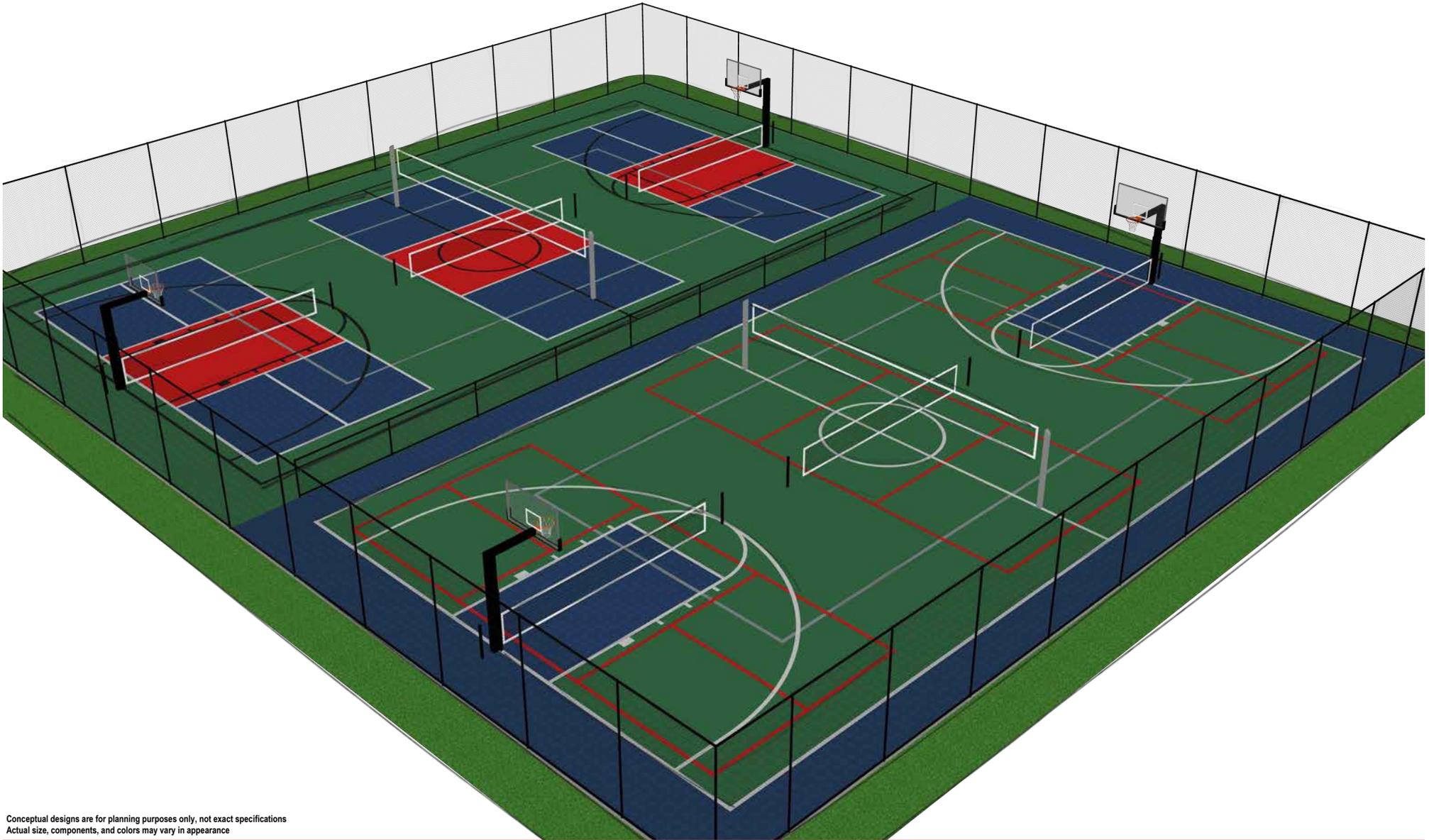


Conceptual designs are for planning purposes only, not exact specifications
Actual size, components, and colors may vary in appearance



Huber Heights Community Park
3D View 1

Date created: Oct 23, 2024
Date edited: Oct 23, 2024



Conceptual designs are for planning purposes only, not exact specifications
Actual size, components, and colors may vary in appearance



Huber Heights Community Park
3D View 2

Date created: Oct 23, 2024
Date edited: Oct 23, 2024



Conceptual designs are for planning purposes only, not exact specifications
Actual size, components, and colors may vary in appearance



Huber Heights Community Park
3D View 3

Date created: Oct 23, 2024
Date edited: Oct 23, 2024

Current Basketball Court at Community Park



Deep Cracking



Former Tennis Post Holes

Proposed Community Park Basketball (Multi-Sport Court)



AI-10675

Topics Of Discussion E.

Council Work Session

Meeting Date: 03/04/2025

Disposal Of Surplus Vehicles - Police Division

Submitted By: Anthony Ashley

Department: City Manager

Council Committee Review?: Council Work Session

Division: Police

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Disposal Of Surplus Vehicles - Police Division

Purpose and Background

This legislation is to authorize the disposal of surplus vehicles in the Police Division.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

Resolution

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

DECLARING CERTAIN CITY PROPERTY IN THE POLICE DIVISION NO LONGER NEEDED FOR MUNICIPAL PURPOSES AS SURPLUS AND AUTHORIZING DISPOSAL OF SAID SURPLUS PROPERTY.

WHEREAS, the City of Huber Heights is in possession of certain property including vehicles assigned to the Police Division; and

WHEREAS, the property is no longer needed for municipal purposes.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. Consistent with the provisions of the Ohio Revised Code Section 721.15 and applicable Huber Heights Codified Ordinances and purchasing procedures, the following equipment is declared surplus, no longer required for municipal purposes, and authorization is hereby provided to dispose of the property consistent with the provisions of the Huber Heights Codified Ordinances.

<u>VIN #</u>	<u>MAKE/MODEL/YEAR</u>	<u>ASSET TAG</u>
2GNAXHEV6J6123935	CHEVROLET/EQUINOX/2018	P01809
22C3CDXAT7MH662845	DODGE/CHARGER/2021	P01859
2C3CDXAT9MH662844	DODGE/CHARGER/2021	P01858
1GNLCDEC3LR238446	CHEVROLET/TAHOE/2020	
1FM5K8AR3GGC50518	FORD/EXPLORER/2016	P01750
1GNLCDEC8LR238488	CHEVROLET/TAHOE/2020	P01854
2C3CDXAT0MH662847	DODGE/CHARGER/2021	
2C3CDXAT6MH639542	DODGE/CHARGER/2021	P01857

Section 2. Authorization is hereby provided to the City Manager to dispose of the listed surplus item(s) on an online auction site or in such other manner as authorized by law.

Section 3. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 4. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

AI-10682

Topics Of Discussion F.

Council Work Session

Meeting Date: 03/04/2025

Janitorial Services - City Buildings - Award Contract

Submitted By: Linda Garrett

Department: Assistant City Manager - Public Services

Council Committee Review?: Council Work Session

Division: Public Works

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Janitorial Services - City Buildings - Award Contract

Purpose and Background

This legislation is to authorize the award of a contract for janitorial services for City buildings.

Fiscal Impact

Source of Funds: Public Works Division Budget

Cost: \$200,000 Annually

Recurring Cost? (Yes/No): Yes

Funds Available in Current Budget? (Yes/No): Yes

Financial Implications:

Attachments

Resolution

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

AUTHORIZING THE CITY MANAGER TO AWARD A THREE-YEAR CONTRACT AND AN OPTION FOR A ONE YEAR EXTENTSION FOR THE PROVISION OF JANITORIAL SERVICES FOR THE CITY HALL BUILDING, THE POLICE BUILDING, THE SENIOR CENTER BUILDING, THE RICHARD F. SHOMPER CITY GOVERNANCE CENTER BUILDING, THE HUBER HEIGHTS COMMUNITY CENTER, THE MONTGOMERY COUNTY MUNICIPAL COURT BUILDING, AND 6428 CHAMBERSBURG ROAD.

WHEREAS, the City of Huber Heights is responsible for the maintenance and cleanliness of the City Hall Building, the Police Building, the Senior Center Building, the Richard F. Shomper City Governance Center Building, the Huber Heights Community Center, the Montgomery County Municipal Court Building, and 6428 Chambersburg Road to keep these buildings operating efficiently and safely; and

WHEREAS, the City of Huber Heights desires to contract with one company which can provide the requisite janitorial services for all of the aforementioned facilities at the most responsible price and quality of service for a period of three years from January 1, 2025 to December 31, 2027, with the option of a one-year extension; and

WHEREAS, the cost for such services is estimated in an amount not to exceed \$200,000.00.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The City Manager is hereby authorized to award a three-year contract from January 1, 2025 to December 31, 2027 for the provision of janitorial services for the City Hall Building, the Police Building, the Senior Center Building, the Richard F. Shomper City Governance Center Building, the Montgomery County Municipal Court Building, and 6428 Chambersburg Road to Environment Control, P.O. Box 877, Tipp City, Ohio 45371 in an amount not to exceed \$200,000.00 annually for a three-year period, with an option for a one-year contract extension.

Section 2. It is herby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were taken in meetings open to the public and in conformance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 3. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

AI-10689

Topics Of Discussion G.

Council Work Session

Meeting Date: 03/04/2025
Creekside Woods - Development Agreement

Submitted By: Aaron Sorrell

Department: Assistant City Manager - Public Services

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: None **Legal Review:** In Process

Emergency Legislation?: No **Motion/Ordinance/Resolution No.:**

Agenda Item Description or Legislation Title

Creekside Woods - Development Agreement

Purpose and Background

This legislation authorizes the City Manager to execute a development agreement with GreyFoxCreekside LLC, to develop a 159-unit, for-sale, townhome community near the terminus of Charlesgate Road. The development will be constructed in two phases. Phase One consists of 78 units, and Phase Two will consist of 81 units. The anticipated average sales price is \$305,000 per home. The proposed development agreement authorizes the issuance of revenue bonds secured by the developer to offset a portion of the public infrastructure costs, mainly water and sewer utilities. The developer anticipates beginning construction in 2025 with Phase One completed by July, 2027 and Phase Two completed by December, 2028.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

This development agreement authorizes the issuance of revenue bonds secured by the developer, through a 15-year CRA with minimum service payments equal to the required debt service. The site is located within the Montgomery County TIF district.

Attachments

Resolution

Exhibit A

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

AUTHORIZING THE EXECUTION OF A DEVELOPMENT AGREEMENT WITH
GREYFOXCREEKSIDE, LLC FOR THE CREEKSIDE WOODS DEVELOPMENT PROJECT.

WHEREAS, the City of Huber Heights (the “City”) and GreyFoxCreekside, LLC (the “Developer”) intend to enter into a development agreement (the “Agreement”); and

WHEREAS, the Agreement provides for the development of approximately 25.6 acres of real property located on Charlesgate Road, identified as Montgomery County Parcel Number P70 01924 0003; and

WHEREAS, the Developer proposes to construct approximately 159 units of for-sale townhome-style housing (the “Project”); and

WHEREAS, the City and the Developer have agreed to enter into the Agreement, attached hereto as Exhibit A, to facilitate the construction of the Project, including the provision of development incentives such as real property tax exemptions and the issuance of one or more revenue bonds; and

WHEREAS, the City Council finds that executing and delivering the Agreement is in the best interest of the City, as it will foster economic development, create new jobs, and improve the overall economic welfare of the residents of the City of Huber Heights and the State of Ohio.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio, that:

Section 1. The development agreement between the City of Huber Heights and GreyFoxCreekside, LLC, attached hereto as Exhibit A, providing for the construction of approximately 159 units of for-sale townhome-style housing and the associated development incentives, including real property tax exemptions and revenue bonds, is hereby approved. The City Manager is authorized to make any changes to the Agreement that are consistent with this Resolution and not substantially adverse to the City. Such changes shall be approved by the City Manager and reviewed by the Law Director.

Section 2. The City Manager is hereby authorized, on behalf of the City, to execute the Agreement. Any changes made to the Agreement that are not substantially adverse to the City, as determined by the City Manager and approved by the Law Director, shall be conclusively evidenced by the execution of the Agreement.

Section 3. The City Manager, the Finance Director, the Law Director, the Clerk of Council, and any other appropriate City officials are hereby authorized and directed to prepare, execute, and sign all necessary agreements and documents, and to take any actions required to implement this Resolution.

Section 4. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 5. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

EXHIBIT A

DEVELOPMENT AGREEMENT

by and between

CITY OF HUBER HEIGHTS, OHIO

and

GREYFOX CREEKSIDE LLC

relating to

MULTI-FAMILY RESIDENTIAL DEVELOPMENT

dated as of

_____, 2025

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DEVELOPMENT AGREEMENT

This DEVELOPMENT AGREEMENT (this “*Agreement*”) is made and entered into this ____ day of _____, 2025 (the “*Effective Date*”) by and between the CITY OF HUBER HEIGHTS, OHIO (the “*City*”), a municipal corporation duly organized and validly existing under the Constitution and the laws of the State of Ohio (the “*State*”) and its Charter and GreyFoxCreekside LLC, an Ohio corporation (the “*Developer*” and together with the City, the “*Parties*” and each of the Parties individually referred to herein as a “*Party*”), under the circumstances summarized in the following recitals (terms used but not defined in the Recitals shall have the meaning set forth in Section 1.2):

RECITALS

WHEREAS, the Developer has acquired or intends to acquire certain real property within the City (which real property is depicted on EXHIBIT A which is attached hereto and incorporated herein by reference and such real property is collectively referred to herein as the “*Developer Property*”) and the Developer proposes to construct, or cause to be constructed, thereupon 159 zero-lot line residential lots (the “*Development Project*”), which is expected to facilitate the construction of 159 townhome residences upon such lots (collectively with the Development Project, the “*Project*”); and

WHEREAS, the Developer has determined that certain Public Improvements will need to be constructed and certain real property tax incentives will need to be provided by the City to support the Project; and

WHEREAS, the City has determined that the Project is expected to result in the creation of housing for its residents; and

WHEREAS, the City has determined that in consideration for the Developer’s agreement to construct or cause the construction of the Development Project which is expected to provide housing for the City’s residents, the City will provide for certain real property tax incentives and issue one or more series of revenue bonds for the purpose of paying the costs of certain Public Improvements which will directly benefit the Project, and will construct, or cause to be constructed, those Public Improvements; and

WHEREAS, the City Council has heretofore adopted Resolution No. 93-R-1347 on November 8, 1993 (the “*Original CRA Resolution*”), which was subsequently amended by the adoption of Resolution No. 2021-R-7035 on September 13, 2021 (the “*First Amending CRA Resolution*”) together with the Original Resolution the “*CRA Resolution*”, declaring a certain area within the City, which area currently includes the Developer Property, to be a Community Reinvestment Area (“*CRA #6*”) within the meaning of the CRA Statute and provided that qualifying structures constructed within CRA #6 would be eligible for a real property tax exemption of up to 100% for up to 15 years; and

WHEREAS, the City has determined that the public infrastructure is inadequate to serve the needs of the Project, and in order to facilitate the construction of the Public Improvements, the City desires to enact the TIF Ordinance under the TIF Statute whereby it will create multiple tax increment financing incentive districts and declare that one-hundred percent (100%) of the

increase in assessed value of the Developer Property will be a public purpose and exempt from real property taxation in accordance with the TIF Statute for a period of thirty (30) years; and

WHEREAS, the TIF Ordinance will provide that the owners of the Developer Property will make Statutory Service Payments with respect to the Developer Property; and

WHEREAS, pursuant to this Agreement and the Declaration, the Developer, on behalf of itself for so long as it owns the Developer Property and on behalf of future owners of the Developer Property, will also make Minimum Service Payments with respect to the Developer Property; and

WHEREAS, the City has determined that a portion of the Statutory Service Payments will be used to fully reimburse the Huber Heights City School District and the Miami Valley Career Technology Center for the portion of the exempted real property taxes that each of those school districts would have received but for the TIF Exemptions and acknowledges that an additional portion of the Statutory Service Payments will be paid to certain other taxing authorities pursuant to the TIF Statute and the TIF Ordinance; and

WHEREAS, the City has determined that it will also use the Pledged Net Statutory Service Payments and the Minimum Service Payments to pay the Administrative Costs and to secure the Debt Service on the Bonds to be issued by the City to finance the costs of the Public Improvements; and

WHEREAS, the Parties have determined to enter into this Agreement to facilitate the Project, to provide for certain real property tax incentives, to provide for the collection of Statutory Service Payments and Minimum Service Payments and to provide for the construction of certain related Public Improvements;

NOW, THEREFORE, in consideration of the premises and covenants contained herein, the Parties hereto agree and obligate themselves as follows:

(END OF RECITALS)

ARTICLE I

DEFINITIONS

. In addition to the words and terms defined elsewhere in this Agreement or by reference to another document, the words and terms set forth in Section 1.2 shall have the meanings set forth in Section 1.2 unless the context or use clearly indicates another meaning or intent.

. As used herein:

“**Administrative Costs**” means such reasonable costs (*i.e.*, accounting, Bond Trustee, financial, legal and third-party administrators) incurred by the City in connection with the administration and collection of the Net Statutory Service Payments and the Minimum Service Payments and the issuance of the Bonds.

“**Aggregate Amount Available for Debt Service**” means that term as defined in Section 6.3(b)(iii).

“**Aggregate CRA Exemption Valuation**” means that term as defined in Section 6.3(b)(ii).

“**Aggregate Developed Parcels Payments**” means that term as defined in Section 7.5(b)(i).

“**Agreement**” means this Development Agreement, dated as of the Effective Date, by and between the City and the Developer.

“**Annual Debt Service Requirement**” means, for any computation period, an amount equal to the actual amount of Debt Service payable on the outstanding Bonds.

“**Authorized City Representative**” means initially the City Manager of the City. The City may from time to time provide a written certificate to the Developer signed on behalf of the City by the City Manager designating an alternate or alternates who has the same authority, duties and powers as the initial Authorized City Representative.

“**Authorized Developer Representative**” means initially Ryan Sommers, in the capacity as (GreyFoxCreekside, LLC) for the Developer. The Developer may from time to time provide a written certificate to the City signed on behalf of the Developer by its President or General Counsel designating an alternate or alternates or a substitute who has the same authority, duties and powers as the initial Authorized Developer Representative.

“**Bond Trustee**” means U.S. Bank Trust Company, National Association, or such other successor trustee appointed by the City to serve as trustee for the Bonds.

“**Bonds**” means, collectively, each series of bond anticipation notes or bonds issued by the City to pay the costs of any Phase of the Public Improvements. It is anticipated that the City will issue a separate series of Bonds for each Phase of the Public Improvements.

“**City**” means the City of Huber Heights, Ohio, an Ohio municipal corporation.

“**City Attorney**” means the City Attorney of the City (including such person serving in an acting or interim capacity).

“**City Codified Ordinances**” means the Codified Ordinances of the City, as amended and supplemented from time to time.

“**City Council**” means the City Council of the City.

“**City Default**” shall have the meaning set forth in Section 8.2.

“**City Manager**” means the City Manager of the City (including such person serving in an acting or interim capacity).

“**City’s Portion of the Cost of the Work**” means such portion of the Cost of the Work which will be paid from proceeds of the Bonds.

“**Common Element**” means those lands and assets held in ownership by the Developer, or its successors, which collectively and equally benefit all successive owners of the Project and to which all successive owners shall have equal access to and ownership therein.

“**Completion Certificate**” has the meaning set forth in Section 5.4(d).

“**Construction Documents**” means, collectively, this Agreement and the Drawings and Specifications as such documents may be revised or supplemented from time to time with the approval of the Authorized City Representative and the Authorized Developer Representative, which Drawings and Specifications contain the detailed construction plans and specifications for the Public Improvements and when completed, will be placed on file with the Authorized City Representative on behalf of the City. As the context may require, Construction Documents may also refer to the documents described above which are prepared in connection with a specific Phase of the Public Improvements.

“**Construction Account**” has the meaning set forth in Section 5.4(t)(i).

“**Cost of the Work**” means, as the case may be, the actual costs of the design and construction of the Public Improvements. Cost of the Work may include construction labor and material costs, related permit and inspection fees, design and engineering fees as approved by the Engineer, site preparation costs, legal fees related to the review of project construction documents, and other costs necessary and appurtenant thereto, all as further described in the approved Construction Documents. As the context may require, Cost of the Work may also refer to the specific amounts described above which are incurred in connection with the construction of a specific Phase of the Public Improvements.

“**County**” means the County of Montgomery, Ohio.

“**County Auditor**” means the County Auditor of the County (including such person serving in an acting or interim capacity).

“**County Recorder**” means the County Recorder of the County (including such person serving in an acting or interim capacity).

“**County Treasurer**” means the County Treasurer of the County (including such person serving in an acting or interim capacity).

“**Coverage Factor**” means an amount equal to one hundred fifteen percent (115%).

“**CRA #6**” means the City’s Community Reinvestment Area #6 which was created pursuant to the CRA Resolution.

“**CRA Resolution**” means, collectively, Resolution No. 93-R-1347, adopted by City Council on November 8, 1993, and Resolution No. 2021-R-7035, adopted by City Council on September 13, which created CRA #6 and generally makes provision for exemptions from real property taxation of up to 100% of the assessed valuation of a new structure or remodeling of an existing structure located within CRA #6 for a period of up to 15 years (each a “**CRA Exemption**”), all in accordance with the requirements of the CRA Statute.

“**CRA Statute**” means, collectively, Ohio Revised Code Sections 3735.65 *et seq.*, and those sections as each may hereafter be amended from time to time.

“**Debt Service**” means the payment of principal of and interest on the Bonds.

“**Debt Service Coverage Requirement**” means that term as defined in Section 6.3(b)(iv).

“**Declaration**” shall have the meaning set forth in Section 7.6.

“**Developed Parcel**” has the meaning set forth in Section 7.5(b)(i).

“**Developer**” means Forestar (USA) Real Estate Group Inc., a Delaware corporation.

“**Developer Default**” shall have the meaning set forth in Section 8.1.

“**Developer Mortgage**” shall have the meaning set forth in Section 9.5.

“**Developer Mortgagee**” shall have the meaning set forth in Section 9.5.

“**Developer’s Portion of the Cost of the Work**” means such portion (if any) of the Cost of the Work in excess of the City’s Portion of the Cost of the Work.

“**Drawings and Specifications**” has the meaning set forth in Section 5.4(g).

“**Effective Date**” means the date as defined in the preamble of this Agreement.

“**Engineer**” means the City Engineer (including such person serving in an acting or interim capacity), or any architectural or engineering firm licensed to perform architectural and engineering services within the State of Ohio and appointed by the City with the consent of the Authorized Developer Representative, which consent may not be unreasonably withheld or delayed.

“**Engineer’s Completion Certificate**” has the meaning set forth in Section 5.4(d)(ii).

“*Force Majeure*” has the meaning set forth in Section 8.5.

“*Minimum Service Payments*” means the minimum service payments which will be paid by the respective owners of the Developer Property from time to time pursuant to and in accordance with Ohio Revised Code Section 5709.91 and this Agreement (particularly Section 7.5).

“*Net Statutory Service Payments*” means that portion of the Statutory Service Payments which the City receives following those payments which are required to be paid pursuant to the TIF Statute and the TIF Ordinance to any other taxing authority, including but not limited to, the Huber Heights City School District and the Miami Valley Career Technology Center.

“*Notice Address*” means:

as to the City:

City of Huber Heights, Ohio
6131 Taylorsville Road
Huber Heights, Ohio 45424
Attention: City Manager
Telephone: (937) 233-1423
Email: jrussell@hhoh.org

as to the Developer:

GreyFoxCreekside LLC
Attention: Ryan Sommers
6161 Oak Tree Boulevard, Suite 250
Independence, OH 44131
Telephone: (440) 669-5040
Email: ryan.sommers@greyfoxre.com

With copies to:

GreyFoxCreekside LLC
Attention: Drew Cook
6161 Oak Tree Boulevard, Suite 250
Independence, OH 44131
Telephone: (919) 210-9763
Email: drew.cook@greyfoxre.com

GreyFoxCreekside LLC
Attention: Jacob Shields
6161 Oak Tree Boulevard, Suite 250
Independence, OH 44131
Telephone: (330) 618-5692
Email: jacob.shields@greyfoxre.com

GreyFoxCreekside LLC
Attention: Alex Previts

6161 Oak Tree Boulevard, Suite 250
Independence, OH 44131
Telephone: (216) 469-7005
Email: alex.previts@greyfoxre.com

Taft Stettinius & Hollister LLP
Attention: Chris L Connelly
41 S. High Street, Suite 1800
Columbus, Ohio 43215-6106
Email: cconnelly@taftlaw.com

“*Phase*” means, and the context may require, (i) in reference to the separate phases of the Development Project, such particular phase as described in Section 4.2 and (ii) in reference to the separate phases of the Public Improvements, such particular phase as described on **EXHIBIT C**.

“*Pledged Net Statutory Service Payments*” means such portion of the Net Statutory Service Payments which were paid in respect of either (a) a Developed Parcel Payments and which Payment related to a tax year in respect of which a CRA Exemption also applied to that Developed Parcel or (b) an Undeveloped Parcel.

“*Public Improvements*” means, collectively, the five phases of public infrastructure improvements as are more fully described on **EXHIBIT C**, which is attached hereto and incorporated herein by reference.

“*Request for Payment*” means the form of certificate substantially in a form as set forth on **EXHIBIT B** and which details all or a portion of the City’s Portion of the Cost of the Work for a particular Phase of the Public Improvements and for which the Developer seeks payment from proceeds of the related series of Bonds issued by the City.

“*Statutory Service Payments*” means the service payments in lieu of taxes which will be paid by the respective owners of the Developer Property pursuant to and in accordance with Ohio Revised Code Section 5709.42.

“*State*” means the State of Ohio.

“*TIF Exemption*” and “*TIF Exemptions*” have the meaning set forth in Section 7.3.

“*TIF Fund*” means the municipal public improvement tax increment equivalent fund created pursuant to the TIF Ordinance and into which the Statutory Service Payments received by the City will be deposited.

“*TIF Ordinance*” means, collectively, one or more ordinances to be passed by City Council pursuant to Ohio Revised Code Section 5709.40(C) which will declare that 100% of the increase in the assessed value of the Developer Property with respect to each Phase of the Development Project subsequent to the effective date of any such ordinance to be a public purpose and exempt from taxation in accordance with the requirements of the TIF Statute.

“*TIF Statute*” means, collectively, Ohio Revised Code Sections 5709.40, 5709.42 and 5709.43.

“*Undeveloped Parcel*” has the meaning set forth in Section 7.5(b)(ii).

“*Work*” means, as the case may be, the design and construction of the Public Improvements in accordance with this Agreement.

. Any reference in this Agreement to the City or to any officers of the City includes those entities or officials succeeding to their functions, duties or responsibilities pursuant to or by operation of law or lawfully performing their functions.

Any reference to a section or provision of the Constitution of the State, a section, provision or chapter of the Ohio Revised Code, or a section or provision of the City Codified Ordinances includes the section, provision or chapter as modified, revised, supplemented or superseded from time to time; *provided that*, no amendment, modification, revision, supplement or superseding section, provision or chapter will be applicable solely by reason of this paragraph if it constitutes in any way an impairment of the rights or obligations of the Parties under this Agreement.

Unless the context indicates otherwise, words importing the singular number include the plural number, and vice versa; the terms “*hereof*”, “*hereby*”, “*herein*”, “*hereto*”, “*hereunder*” and similar terms refer to this Agreement; and the term “*hereafter*” means after, and the term “*heretofore*” means before, the date of this Agreement. Words of any gender include the correlative words of the other gender, unless the sense indicates otherwise. References to articles, sections, subsections, clauses, exhibits or appendices in this Agreement, unless otherwise indicated, are references to articles, sections, subsections, clauses, exhibits or appendices of this Agreement.

. Where there is a conflict between this Agreement and the Construction Documents, the conflict will be resolved by providing the better quality or greater quantity and compliance with the more stringent requirement. If an item is shown on the Drawings and Specifications but not specified, the Developer will provide the item of the same quality as similar items specified, as determined by the Engineer. If an item is specified but not shown on the Drawings and Specifications, it will be located as directed by the Engineer.

(END OF ARTICLE I)

ARTICLE II

GENERAL AGREEMENT AND TERM

. For the reasons set forth in the Recitals hereto, which Recitals are incorporated herein by reference as a statement of the public purposes of this Agreement and the intended arrangements between the Parties, the Parties intend to and shall cooperate in the manner described herein to facilitate the design, financing, construction, acquisition and installation of the Development Project and the Public Improvements, the provision of related tax incentives and the collection of the Statutory Service Payments and the Minimum Service Payments.

. The City and the Developer each acknowledge and agree that in fulfilling its obligations under this Agreement, the Developer acts as an independent contractor of the City and not as an agent of the City.

. This Agreement shall become effective as of the Effective Date and will continue until the Parties' respective obligations set forth herein have been fulfilled, unless earlier terminated in accordance with this Agreement.

(END OF ARTICLE II)

ARTICLE III

REPRESENTATIONS AND COVENANTS OF THE PARTIES

. The City represents and covenants that:

(a) It is a municipal corporation duly organized and validly existing under the Constitution and applicable laws of the State and its Charter.

(b) It is not in violation of or in conflict with any provisions of the laws of the State or of the United States of America applicable to it that would impair its ability to carry out its obligations contained in this Agreement.

(c) It is legally empowered to execute, deliver and perform this Agreement and to enter into and carry out the transactions contemplated by this Agreement. That execution, delivery and performance does not and will not violate or conflict with any provision of law applicable to it, including its Charter, and does not and will not conflict with or result in a default under any agreement or instrument to which it is a party or by which it is bound.

(d) This Agreement has, by proper action, been duly authorized, executed and delivered by it and all steps necessary to be taken by it have been taken to constitute this Agreement, and its covenants and agreements contemplated herein, as its valid and binding obligations, enforceable in accordance with their terms.

(e) There is no litigation pending or threatened against or by it wherein an unfavorable ruling or decision would materially adversely affect its ability to carry out its obligations under this Agreement.

(f) It will do all things in its power in order to maintain its existence or assure the assumption of its obligations under this Agreement by any successor public body.

(g) Resolution No. _____ passed by City Council on _____, authorizing the execution and delivery of this Agreement, has been duly passed and is in full force and effect as of the Effective Date.

(h) For purposes of this Section 3.1, the term “*knowledge*” means the actual knowledge of the City Manager, without further investigation, as of the Effective Date.

. The Developer represents and covenants that:

(a) It is a for profit corporation duly organized and validly existing under the applicable laws of the State of Ohio.

(b) It is not in violation of or in conflict with any provisions of the laws of the State of Ohio, or of the United States of America applicable to it that would impair its ability to carry out its obligations contained in this Agreement.

(c) It is legally empowered to execute, deliver and perform this Agreement and to enter into and carry out the transactions contemplated by this Agreement. That execution, delivery and performance does not and will not violate or conflict with any provision of law applicable to the Developer and does not and will not conflict with or result in a default under any agreement or instrument to which it is a party or by which it is bound.

(d) This Agreement has, by proper action, been duly authorized, executed and delivered by it and all steps necessary to be taken by it have been taken to constitute this Agreement, and its covenants and agreements contemplated herein, as its valid and binding obligations, enforceable in accordance with their terms.

(e) There is no litigation pending or threatened against or by it wherein an unfavorable ruling or decision would materially adversely affect its ability to carry out its obligations under this Agreement.

(f) It will do all things in its power in order to maintain its existence or assure the assumption of its obligations under this Agreement by any successor entity.

(g) It, each of its directors and shareholders, each spouse of its directors and shareholders, each child of its directors and shareholders, and each political action committee affiliated with the Developer complies with Ohio Revised Code Section 3517.13 limiting political contributions.

(h) For purposes of this Section 3.2, the term “*knowledge*” means the actual knowledge of Ryan Sommers, in his capacity as GreyFoxCreekside, LLC for the Developer, without a duty to investigate.

(END OF ARTICLE III)

ARTICLE IV

DEVELOPMENT PROJECT

. The Developer agrees that it will proceed in good faith and with all reasonable dispatch to design, finance and construct, or cause to be designed, financed and constructed, the Development Project, which is anticipated to be constructed in Phases as set forth below, and to perform any and all of its duties and obligations relating to the Development Project in a manner consistent with this Agreement, subject to market conditions as they may exist from time to time during the term of this Agreement.

(a) General. The Parties acknowledge and agree that the Development Project is expected to be completed in two (2) separate Phases. The Phases are expected to be completed as follows:

(i) Phase 1 will consist of 78 single-family residential lots with an anticipated average sales price of \$305,000 per residence and with final buildout completions beginning on or about July, 2027,

(ii) Phase 2 will consist of 81 single-family residential lots with an anticipated average sales price of \$305,000 per residence and with final buildout completions beginning on or about December, 2028,

(b) Annual Updates. Until the Development Project has been fully completed in accordance with this Agreement, no later than July 1st of each year, the Developer shall provide to the City a written update of the information set forth in Section 4.2(a).

(c) Job Creation. The Developer anticipates that approximately 100 to 150 temporary jobs will be created in connection with the construction of the Development Project.

(d) Market Valuation. The Developer anticipates that the Development Project will have a market valuation (for purposes of real property taxation) of at least \$41 million upon completion of all Phases.

. In connection with each Phase of the Development Project, the Developer shall prepare and submit a site plan and related development plan(s) to the City, in such detail as is reasonably necessary for review and approval by appropriate City Boards or Commissions in accordance with the ordinary exercise of their respective rights and duties, all pursuant to and in accordance with the pertinent City Codified Ordinances. The City agrees that those reviews and approvals shall not be unreasonably conditioned, delayed or withheld.

. The Developer shall be responsible for developing the Development Project in accordance with the detailed development plan(s), as may be modified from time to time, and as such plan(s) is approved by the City as hereinbefore; *provided that*, notwithstanding anything in this Agreement to the contrary, the Developer's obligations with respect to each Phase of the Development Project shall not commence until Bonds have been issued and funds sufficient to pay

for the City's Portion of the Cost of the Work for the applicable Phase of the Public Improvements have been deposited into the Construction Account.

. Prior to commencing construction of each Phase of the Development Project, the Developer shall obtain all necessary permits from all levels of government having jurisdiction over the Development Project to allow the Developer to build and develop that Phase of the Development Project consistent with the detailed development plan(s) for the Development Project. Standards for permit approval shall comply with all applicable standards (as may be set forth in City Codified Ordinances or elsewhere) at the time of zoning permit application or, in the case of the City administrative plan review requirements, at the time of application for those predevelopment permits.

. The Developer shall, as and when customarily payable to the City on projects comparable to the Development Project, pay the then current standard fees in connection with any construction of the Development Project, which fees shall include, but not be limited to, fees for the provision of water, sanitary sewer and storm sewer services, and which fees, the City agrees, will be determined in a manner consistent and uniform with the manner of fee determination on projects comparable to the Development Project. The Developer acknowledges and agrees that the City reserves the right to adjust the standard fees described in this Section 4.7 from time to time in a manner consistent and uniform with the manner of fee determination on projects comparable to the Development Project. The Developer shall also ensure that any other standard fees, sales and use taxes, if any, and license and inspection fees necessary for the completion of the Development Project shall be timely paid.

. The City agrees to provide to the Development Project all City services usually and customarily provided by the City, including but not limited to, fire and police protection and road maintenance; *provided, however*, the City shall not be required to construct and install improvements related to the provision of those services except as otherwise provided herein.

. The Developer or its contractors and subcontractors shall provide insurance coverage and surety bonds during the course of construction of the Development Project only if and as otherwise required by the City Codified Ordinances and other applicable development regulations.

. In connection with the construction of the Development Project and in performing its obligations under this Agreement, the Developer agrees that it shall comply with, and require all of its employees, agents, contractors and consultants to comply with, all applicable federal, state, county, municipal (including City Codified Ordinances) and other governmental statutes, laws, rules, orders, regulations, ordinances, judgments, decrees and injunctions of any court, board, agency, commission, office or other authority of any nature whatsoever for any governmental unit (federal, state, county, district, municipal, city or otherwise) whether now or hereafter in existence affecting the Development Project or any part thereof, or the construction, use, alteration or operation thereof, or any part thereof, whether now or hereafter enacted and in force, and all permits, licenses and authorizations and regulations relating thereto, and all covenants, agreements, restrictions and encumbrances contained in any instruments, either of record or legally binding upon the Developer, at any time in force affecting the Development Project or any part thereof.

. The Parties agree that the expeditious completion of the Development Project will benefit both Parties. To that end, the Parties agree to act in good faith and in a cooperative manner to complete the Development Project in accordance with the terms of this Agreement. The City also agrees to act in good faith and diligently review the various applications and other matters which must be approved by the City as compliant with applicable laws and regulations in connection with the Development Project; *provided, however*, the Developer acknowledges and agrees that the various approvals of the City relating to planning and zoning described in this Article IV shall not be effective until approved by the appropriate body as contemplated hereby. The Parties each agree that the City shall have no responsibility relative to the marketing or sale of the real property or improvements thereto within the Development Project.

(END OF ARTICLE IV)

ARTICLE V

CONSTRUCTION OF PUBLIC IMPROVEMENTS

. The Developer agrees that it will proceed in good faith and with all reasonable dispatch to design, construct and install the Public Improvements, which are expected to be constructed and installed in various Phases, and to perform any and all of its duties and obligations relating to the Public Improvements in a manner consistent with this Agreement in order that the portion of the Public Improvements required for access to each Phase of the Development Project will be open and available to the public on or before the date on which a certificate of occupancy is issued for that Phase of the Development Project, and it will perform any and all of its duties and obligations relating to the Public Improvements in a manner consistent with this Agreement.

. The Developer shall be responsible for the following with respect to the Development Project:

(a) Water. Except as otherwise included as a Public Improvement, at no cost to the City, it shall be the obligation of the Developer to construct the water lines, hydrants, valves, irrigation systems and related appurtenances within the Development Project, which water lines, hydrants, valves, irrigation systems and related appurtenances shall be installed and inspected pursuant to plans and specifications approved by the City Engineer in accordance with the City's standard requirements.

(b) Sanitary Sewer. Except as otherwise included as a Public Improvement, at no cost to the City, it shall be the obligation of the Developer to construct the sanitary sewer lines and related appurtenances within the Development Project, which sanitary sewer lines and related appurtenances shall be installed and inspected pursuant to plans and specifications approved by the City Engineer in accordance with the City's standard requirements.

(c) Storm Sewer. Except as otherwise included as a Public Improvement, at no cost to the City, the Developer shall provide to the City storm sewer drainage easements, as necessary, and will dedicate a storm sewer collection system and related onsite and offsite regional detention and/or retention ponds to the City which will be designated on the detailed development plan(s) and plat(s) for the Development Project. The exact location and size of such storm sewer drainage easements and regional ponds shall be determined by the detailed development plan(s) and final plat(s) as approved by the City, consistent with the zoning thereof, as herein provided, engineering standards and all other applicable rules and regulations.

Specific to the Development Project, the City shall assume maintenance responsibilities for the underground storm sewer pipes while the Developer, or its successors or any homeowners' association(s) at the Developer's election, shall be responsible for the maintenance of all other components of the storm sewer collection system including related onsite and offsite regional detention and/or retention ponds to the City which will be designated on the detailed development plan(s) and plat(s) for the Development Project.

[Developer shall provide in any recorded association documents for the Developer Property executed by the Developer a provision substantially as follows: “Notwithstanding anything contained in this Declaration to the contrary, the City of Huber Heights, Ohio in its sole discretion, shall have the right, but not the obligation, to maintain, repair and/or replace any of the Common Elements in need of maintenance, repair and or replacement, if the Association fails to do so. In the event the City of Huber Heights maintains, repairs and/or replaces a Common Element, the City shall have the right to levy a special assessment against the Association, or directly to each benefitting Lot Owner, for the actual costs incurred for the undertaking of such maintenance, repair and/or replacement. The Developer, and each Owner by acceptance of a deed or other instrument of conveyance for a Lot, expressly assents and consents to such special assessment by the City. The City and its employees and contractors shall have a perpetual right of entry for the purpose of maintenance, repair and replacement of such Common Elements described herein, as well as the right to maintain drainage areas and facilities, sump drains, and other facilities that are the responsibility of individual Owners in which case the City's special assessment shall be charged to the affected Lot as an individual assessment. The provision of this Section shall not be subject to any termination, amendment or modification without the written consent of the City of Huber Heights.”]

The Parties covenant and agree that all roadway, utility and other construction and development work undertaken by such Party (or a third party upon the direction of a Party) will be designed and performed in such a manner so as to not disrupt or otherwise interfere with any then existing storm sewer drainage systems (surface, field tile or other) on or off of the Developer Property.

(d) Roadways. Except as otherwise included as a Public Improvement, all roads within the Development Project shall be constructed by the Developer as needed for its intended use of the Development Project. All public roads shall be constructed in accordance with the City standards as applicable to the type of road being constructed and all private roads shall be constructed in accordance with final development plans and permits approved by the City. All roads shall be reviewed, inspected and approved by the City.

(e) Cross Easements for Utility Services. The Parties agree among themselves to grant, without charge, reciprocal cross-easements or easements to public or private utilities, as appropriate, for construction of utilities described in this Section 5.2, or other public or private utilities to service the Developer Property; *provided, however*, that all easements shall be within or adjacent to the various proposed public roads or driveway rights-of-way, as set forth on the revised basic development plan(s) for the Development Project, except as may otherwise be reasonably necessary to assure utility services to all parts of the Developer Property. Easements for surface drainage shall follow established watercourses, unless otherwise agreed to by the affected Party. The Developer shall restore any easement areas to a condition that is reasonably satisfactory to the City promptly following any construction work by a private entity. The City shall restore any easement areas following any construction work by the City in accordance with the City Codified Ordinances.

(f) Dedication. All public utilities and public roadways (including related rights-of-way) installed and/or constructed within the Development Project [(except certain of the storm sewer improvements referenced in Section 5.2(c) which may hereafter be identified by the City and the utility cross easements described in Section 5.2(e))] shall be dedicated (free and clear of any liens, encumbrances and restrictions except as may be permitted in writing by the City) to and accepted by the City and recorded with the County Recorder at such time as is consistent with the City Codified Ordinances and the terms of this Agreement.

. Prior to commencing construction of each Phase of the Public Improvements, the Developer shall obtain all necessary permits from all levels of government having jurisdiction over the Public Improvements to allow the Developer to build and develop that Phase of the Public Improvements consistent with the detailed development plan(s) for the Development Project and Public Improvements. Standards for permit approval shall comply with all applicable standards (as may be set forth in City Codified Ordinances or elsewhere) at the time of zoning permit application or, in the case of the City administrative plan review requirements, at the time of application for those predevelopment permits.

Section 5.4 Public Improvements.

(a) General. In consideration of the Developer's promise to construct, or cause the construction of, the Phase of Public Improvements related to each Phase of the Development Project, the City agrees, subject to Section 5.4(t), to deposit into a Construction Account, which shall be maintained either in the custody of the City or the Bond Trustee as shall be reasonably determined by the City, and solely from proceeds of the series of Bonds issued for such Phase, an amount sufficient to pay, or at the Developer's election, to reimburse, the Developer for the City's Portion of the Cost of the Work for such Phase of the Public Improvements in accordance with the applicable provisions of this Agreement.

(b) Annual Updates. Until a Phase of Public Improvements for which funds will be made available pursuant to this Agreement has been fully completed in accordance with this Agreement, no later than July 1st of each year, the Parties agree to work cooperatively to review and update the list of the Public Improvements for such Phase on **EXHIBIT C** (including the scope and cost).

(c) Design, Construction and Payment of Cost of the Work of the Public Improvements. The Developer will design, based on the Construction Documents, each Phase of the Public Improvements for which funds are made available pursuant to this Agreement. The Developer will perform the Work and pay, from a series of Bond proceeds disbursed by either the City or the Bond Trustee, the City's Portion of the Cost of the Work, and to the extent applicable, the Developer's Portion of the Cost of the Work, in accordance with this Agreement and the Construction Documents, and Developer will provide all necessary and inferable labor, materials, services and acts in connection with the design, construction and completion of each Phase of the Public Improvements, regardless of whether or not reflected in the Construction Documents. Each Phase of the Public Improvements must be designed and built in a manner that is consistent with the

requirements of the City Codified Ordinances. The Developer will use commercially reasonable, good faith efforts to complete construction of all Phases of the Public Improvements, including correction of deficiencies and other punch list items, by December 31, 2026, subject to Force Majeure and market conditions as they may exist from time to time during the term of this Agreement. Notwithstanding anything in this Agreement to the contrary, the Developer may elect not to proceed with any Phase of the Development Project for which funds have not yet been made available pursuant to this Agreement, in which event Developer shall have no obligation to construct the Public Improvements for such Phase.

The Developer will supervise, perform and direct the Work utilizing qualified personnel, and in accordance with the standards of care normally exercised by construction organizations performing similar work.

The Developer agrees that each Phase of the Public Improvements, including all rights-of-way and easements associated therewith, will be dedicated to the City for public use upon completion and acceptance of such Phase as provided in Sections 5.4(d) and 5.4(e) and in accordance with all applicable City platting and dedication requirements.

(d) Completion of Public Improvements. Each Phase of the Public Improvements will be deemed completed upon fulfillment of the following conditions:

(i) Receipt of written notice (the “**Completion Certificate**”) from the Authorized Developer Representative that such Phase of the Public Improvements are complete and ready for final acceptance by the City, which notice must (A) generally describe all property acquired or installed as part of the Public Improvements; (B) state the Cost of the Work, and (C) state and constitute the Developer’s representation that the construction of such Phase of the Public Improvements have been completed substantially in accordance with the Construction Documents, all costs then due and payable in connection therewith have been paid, there are no mechanics’ liens, and all obligations, costs and expenses in connection with such Phase of the Public Improvements have been paid or discharged; and

(ii) Receipt from the Engineer of a final Certificate of Completion (the “**Engineer’s Completion Certificate**”) for such Phase of Public Improvements stating that to the best of the Engineer’s knowledge, information and belief, and on the basis of the Engineer’s on site visits and inspections, that such Phase of the Public Improvements have been satisfactorily completed in accordance with the terms and conditions of the Construction Documents, including all punch list items, that the construction of such Phase of the Public Improvements have been accomplished in a manner that conforms to all then applicable governmental laws, rules and regulations; and that such Phase of the Public Improvements have been approved by the relevant public authorities.

(e) Acceptance of Public Improvements. The City has no obligation to accept a Phase of the Public Improvements until:

(i) Such Phase of the Public Improvements is satisfactorily completed in accordance with the Construction Documents, as evidenced by the Engineer's Completion Certificate for such Phase, a letter of conditional acceptance issued by the City of Huber Heights Department of Engineering and such Public Improvements are properly dedicated as public rights-of-way and easements to the City for such Phase;

(ii) the City receives the Completion Certificate, the Engineer's Completion Certificate and all documents and instruments to be delivered to the City pursuant to the Construction Documents for such Phase;

(iii) the City has received evidence reasonably satisfactory to it that all liens on such Phase of the Public Improvements, including, but not limited to, tax liens then due and payable, the lien of any mortgage, and any mechanic's liens, have been released, or, with respect to mechanic's liens, security therefor has been provided pursuant to Section 5.4(o); and

(iv) for such Phase the Developer has provided the City "as constructed record drawings" consisting of reproducible record drawings showing significant changes in the Public Improvements made during construction and containing such annotations as may be necessary for someone unfamiliar with the Public Improvements to understand the changes that were made to the original Construction Documents.

The City agrees to accept such Phase of the Public Improvements and the rights-of-way allocable thereto upon satisfaction of the conditions listed in (i) through (iv) of the preceding sentence. The City acceptance of the Public Improvements does not relieve the Developer of its responsibility for defects in material or workmanship as set forth in Section 5.4(q).

(f) Extensions of Time. If the Developer or the City is delayed in the commencement or progress of its obligations hereunder by a breach by the other Party of its obligations hereunder, or by Force Majeure, then the time for performance under this Agreement by the Party so delayed will be extended for such time as is commercially reasonable under the circumstances for such Phase.

(g) Construction Documents. The Developer is causing to be prepared the working drawings, plans and specifications that are necessary to be prepared in connection with the Work (collectively, the "***Drawings and Specifications***") for each Phase of Public Improvements. The final version of the Drawings and Specifications for each Phase shall be in a form that is satisfactory to the Authorized City Representative, and the Construction Documents shall be instruments of service through which the Work to be executed is described. The Developer may retain one record set of the Drawings and Specifications. The City shall own the copyrights on the Drawings and Specifications and will retain all common law, statutory and other reserved rights, in addition to the copyrights. All copies of the Drawings and Specifications, except the Developer's record set, must be returned or suitably accounted for to the City, on request, upon final completion of such Phase of the

Public Improvements, and the copy thereof furnished to the Developer is for use solely with respect to the Public Improvements. They are not to be used by the Developer on other projects without the specific written consent of the City. The Developer is authorized to use and reproduce applicable portions of the Drawings and Specifications appropriate to the execution of obligations with respect to such Phase of the Public Improvements and to facilitate its construction of the Project; *provided, however*, that any reproduction and distribution of copies of the Drawings and Specifications by the Developer to the extent necessary to comply with official regulatory requirements or obligations of law will not be construed as an infringement of the copyrights or other reserved rights of the City with respect to the Drawings and Specifications. All copies made under this authorization must bear the statutory copyright notice, if any, shown on the Drawings and Specifications.

(h) Prevailing Wage. The City designates its Assistant City Engineer as the prevailing wage coordinator for the Public Improvements (the “***Prevailing Wage Coordinator***”). The Developer acknowledges and agrees that the Public Improvements are subject to the prevailing wage requirements of Chapter 4115 of the Ohio Revised Code and all wages paid to laborers and mechanics employed on the Public Improvements must be paid at not less than the prevailing rates of wages of laborers and mechanics for the classes of work called for by the Public Improvements in Montgomery County, Ohio, which wages must be determined in accordance with the requirements of that Chapter 4115. The Developer must comply, and the Developer must require compliance by all contractors and must require all contractors to require compliance by all subcontractors working on the Public Improvements, with all applicable requirements of that Chapter 4115, including any necessary posting requirements. The Developer (and all contractors and subcontractors thereof) must cooperate with the Prevailing Wage Coordinator and respond to all reasonable requests by the Prevailing Wage Coordinator when the Prevailing Wage Coordinator is determining compliance by the Developer (and all contractors and subcontractors thereof) with the applicable requirements of that Chapter 4115.

The Prevailing Wage Coordinator will notify the Developer of the prevailing wage rates for the Public Improvements. The Prevailing Wage Coordinator will notify the Developer of any change in prevailing wage rates within seven (7) working days of receiving notice of such change from the Director of the Ohio Department of Commerce. The Developer must immediately upon such notification (a) ensure that all contractors and subcontractors receive notification of any change in prevailing wage rates as required by that Chapter 4115; (b) make the necessary adjustment in the prevailing wage rates and pay any wage increase as required by that Chapter 4115; and (c) ensure that all contractors and subcontractors make the same necessary adjustments.

The Developer must, upon beginning performance of this Agreement, notify the Prevailing Wage Coordinator of the commencement of Work, supply to the Prevailing Wage Coordinator the schedule of the dates relating to construction of each Phase of the Public Improvements and for which the Developer (or any contractors or subcontractor thereof) is required to pay wages to employees. The Developer (and each contractor or subcontractor thereof) must also deliver to the Prevailing Wage Coordinator a certified copy of its payroll relating to laborers performing the Work within two (2) weeks after the initial pay date, and supplemental reports for each month thereafter and in connection with

any Written Requisition exhibiting for each such employee paid any wages, the employee's name, current address, social security number, number of hours worked during each day of the pay periods covered and the total for each week, the employee's hourly rate of pay, the employee's job classification, fringe payments and deductions from the employee's wages; *provided, however*, that the Developer must submit such payroll reports weekly if construction of the Public Improvements is contemplated to last less than four (4) calendar months. The certification of each payroll must be executed by the Developer (or contractor, subcontractor, or duly appointed agent thereof, if applicable) and recite that the payroll is correct and complete and that the wage rates shown are not less than those required by this Agreement and Chapter 4115 of the Ohio Revised Code.

The Developer must provide to the Prevailing Wage Coordinator a list of names, addresses and telephone numbers for any contractors or subcontractors performing any Work on each Phase of the Public Improvements within a reasonable amount of time after they become available, and the name and address of the bonding/surety company and the statutory agent (if applicable) for those contractors or subcontractors. The Developer may not contract with any contractor or subcontractor listed with the Ohio Secretary of State for violations of Chapter 4115 of the Ohio Revised Code pursuant to Section 4115.133 of the Ohio Revised Code.

Prior to payment pursuant to Section 5.4(t), the Developer (and any contractor or subcontractor thereof) must submit to the Prevailing Wage Coordinator the affidavit required by Section 4115.07 of the Ohio Revised Code.

(i) Traffic Control Requirements. The Developer is responsible for ensuring the provision, through contractors or otherwise, of all traffic control devices, flaggers and police officers required to properly and safely maintain traffic during the construction of each Phase of the Public Improvements. All traffic control devices must be furnished, erected, maintained and removed in accordance with the Ohio Department of Transportation's "Ohio Manual of Uniform Traffic Control Devices" related to construction operations.

(j) Equal Opportunity Clause. The Developer must, in all solicitations or advertisements for employees placed by or on behalf of the Developer, state that the Developer is an equal opportunity employer. The Developer will require all contractors and will require all contractors' subcontractors to include in each contract a summary of this equal opportunity clause.

(k) Insurance Requirements. The Developer must furnish proof to the City at the time of commencing construction of each Phase of the Public Improvements of comprehensive general liability insurance naming the City and its authorized agents as an additional insured. The minimum limits of liability for the required insurance policies may not be less than the following unless a greater amount is required by law:

(i) Commercial General Liability ("CGL"): Bodily injury (including death) and property damage with a combined single limit of \$1,000,000 each occurrence, with a \$2,000,000 aggregate; \$100,000 for damage to rented premises

(each occurrence); and \$1,000,000 for personal and advertising injury. CGL must include (A) premises-operations, (B) explosion and collapse hazard, (C) underground hazard, (D) independent contractors' protective, (E) broad form property damage, including completed operations, (F) contractual liability, (G) products and completed operations, with \$2,000,000 aggregate and to be maintained for a minimum period of one (1) year after acceptance of the Public Improvements pursuant to Section 2.4, (viii) personal injury with employment exclusion deleted, and (H) stopgap liability for \$100,000 limit. The general aggregate must be endorsed to provide that it applies to the Work only.

(ii) Automobile liability: covering all owned, non-owned, and hired vehicles used in connection with the Work: Bodily injury (including death) and property damage with a combined single limit of \$1,000,000 per person and \$1,000,000 each occurrence.

(iii) Umbrella Policy: Such policies must be supplemented by an umbrella policy, also written on an occurrence basis, to provide additional protection to provide coverage in the total amount of \$5,000,000 for each occurrence and \$5,000,000 aggregate. The Developer's insurance is primary to any insurance maintained by the City.

(iv) Endorsements: The Developer must obtain an additional named insurance endorsement for the CGL and automobile liability coverage with the following named insureds for covered claims arising out of the performance of the Work under the Construction Documents:

(A) City of Huber Heights, Ohio,

(B) Huber Heights City Council members, executive officers and employees,

(C) Engineer and its employees,

(D) the Developer, to the extent that any construction activities are being staged or undertaken on real property owned by the Developer.

(v) Insurance policies must be written on an occurrence basis only.

(vi) Products and completed operations coverage will commence with the certification of the acceptance of each Phase of the Public Improvements pursuant to Section 5.4(e) and will extend for not less than two (2) years beyond that date.

(vii) The Developer must require all contractors and subcontractors to provide workers' compensation, CGL, and automobile liability insurance with the same minimum limits specified herein, unless the City agrees to a lesser amount.

(viii) If the Work includes environmentally sensitive, hazardous types of activities (such as demolition, exterior insulation finish systems, asbestos abatement, storage-tank removal, or similar activities), or involves hazardous materials, the Developer shall maintain a pollution liability policy with (A) a per-claim limit of not less than \$1,000,000 and (B) an annual-aggregate limit of not less than \$1,000,000, covering the acts, errors and/or omissions of the Developer for damages (including from mold) sustained by the City by reason of the Developer's performance of the Work. The policy shall have an effective date, which is on or before the date on which the Developer first started to perform any Work-related services. Upon submission of the associated certificate of insurance and at each policy renewal, the Developer shall advise the City in writing of any actual or alleged claims which may erode the policy's limits.

(ix) If the Work includes professional design services, Professional liability insurance from the Developer's design professional without design-build exclusions with limits not less than \$1,000,000 per claim and \$2,000,000 annual aggregate. The professional liability policy shall have an effective date which is on or before the date on which the Developer first started to provide any Work-related services. Upon submission of the associated certificate of insurance and at each policy renewal, the Developer shall advise the City in writing of any actual or alleged claims which may erode the professional liability policy's limits. The Developer's consultants and subcontractors shall similarly maintain such coverage as required by this Subsection, and the Developer and each of its consultants and subcontractors shall maintain the professional liability insurance in effect for no less than five (5) years after the earlier of the termination the Contract or final completion of all Work.

(x) The Developer shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Work is located, property insurance on an "all-risk" or equivalent policy form, including builder's risk, in the amount of the initial Cost of the Work, plus the value of subsequent modifications and cost of materials supplied and installed by others, comprising total value for the entire Work at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance until no person or entity other than the City has an insurable interest in the property required by this Section to be covered, whichever is later. This insurance shall include interests of the City, the Developer and subcontractors of any tier. The Developer shall provide a copy of a certificate of insurance, upon request, to the City evidencing such coverage before an exposure to loss may occur. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least thirty (30) days' prior written notice has been given to the Developer and City.

Each policy of insurance and respective certificate of insurance must expressly provide that no less than ten (10) days prior written notice be given to

City in the event of cancellation, non-renewal, expiration or material alteration of the coverage contained in such policy.

(l) City Income Tax Withholdings. The Developer will withhold and pay, will require all contractors to withhold and pay, and will require all contractors to require all subcontractors to withhold and pay, all City income taxes due or payable with respect to wages, salaries, commissions and any other income subject to the provisions of Chapter 192 of the City Codified Ordinances.

(m) Sales Taxes. The Parties intend that building and construction materials incorporated into each Phase of the Public Improvements be exempt from state and local sales taxes. The City will cooperate with the Developer to provide sales tax exemption certificates to contractors in order to exempt those materials.

(n) Compliance with Occupational Health and Safety Act of 1970. The Developer and all contractors and subcontractors are solely responsible for their respective compliance with the Occupational Safety and Health Act of 1970 under this Agreement.

(o) Provisions of Security for Mechanics' Liens. To the extent any materialman, contractor, or subcontractor files and records a mechanic's lien against the Public Improvements, the Developer will, or will require the appropriate contractor to, provide any security required by Chapter 1311 of the Ohio Revised Code to cause that mechanic's lien to be released of record with respect to the Public Improvements. Developer shall prepare and file with the County Recorder, with the assistance of the City, a notice of commencement meeting the requirements of Chapter 1311 of the Ohio Revised Code.

(p) Security for Performance. The Developer will furnish prior to commencement of construction of each Phase of the Public Improvements a performance and payment bond that names the City as obligee in the form provided by Section 153.57 of the Ohio Revised Code. The amount of the performance and payment bond required by this Section 5.4(p) shall equal the Developer's Portion of the Cost of the Work.

Any bond must be executed by sureties that are licensed to conduct business in the State as evidenced by a Certificate of Compliance issued by the Ohio Department of Insurance. All bonds signed by an agent must be accompanied by a power of attorney of the agent signing for the surety. If the surety of any bond so furnished by a contractor declares bankruptcy, become insolvent or its right to do business is terminated in Ohio, the Developer, within five (5) days thereafter, will substitute another bond and surety or cause the contractor to substitute another bond and surety, both of which is acceptable to the City and the Developer. The Developer must provide to the City prior to commencement of any Work by any contractor a copy the security for performance provided by the Developer or contractor pursuant to this Section.

(q) Further Developer Guarantees Relating to Each Phase of the Public Improvements. The Developer guarantees that it will cause to be exercised in the performance of the Work the standard of care normally exercised by well-qualified

engineering and construction organizations engaged in performing comparable services in the greater Dayton, Ohio area. The Developer further warrants that the Work and any materials and equipment incorporated into the Work will be free from defects, including defects in the workmanship or materials (without regard to the standard of care exercised in its performance) for a period of one (1) year) after final written acceptance of the Work (for each Phase of Public Improvements) by City.

Prior to the commencement of Work for each Phase of the Public Improvements, the Developer shall provide a maintenance bond, in the amount of 20% of the total Cost of the Work of such Phase, satisfactory to the City in form and substance ensuring the Developer's obligations under this subsection. The guarantee provided in this Section is in addition to, and not in limitation of, any other guarantee, warranty or remedy provided by law, a manufacturer or the Construction Documents.

If defective Work becomes apparent within the 1-year warranty period, the City will promptly notify the Developer in writing and provide a copy of said notice to the Engineer. Within ten (10) days of receipt of said notice, the Developer will visit the site of the Work in the company of one or more representatives of the City to determine the extent of the defective work. The Developer will, within a reasonable time frame, repair or replace (or cause to be repaired or replaced) the defective Work, including all adjacent Work damaged as a result of such defective Work or as a result of remedying the defective Work. If the defective Work is considered by the City to be an emergency, the City may require the Developer to visit the site of the Work within one day of receipt of said notice. The Developer is fully responsible for the cost of temporary materials, facilities, utilities or equipment required during the repair or replacement of the defective Work.

If the Developer does not repair or replace the defective Work within a reasonable timeframe, the City may repair or replace such defective Work and charge the cost thereof to the Developer or the Developer's surety. Work that is repaired or replaced by the Developer is subject to inspection and acceptance by the Engineer and the City and must be guaranteed by the Developer from the date of acceptance of the corrective work by the City for one (1) year.

(r) Developer Representation as to Personal Property Taxes. The Developer represents that at the time of the execution of this Agreement, it is not charged with any delinquent personal property taxes on the general tax list of personal property of the County. Further, for each Phase of the Public Improvements, the Developer will require all contractors to execute an affidavit in the form set forth on **EXHIBIT E** (which is attached hereto and incorporated herein by reference), a copy of which certificate must be delivered to the Authorized City Representative prior to the commencement of any Work by that contractor or subcontractor.

(s) Indemnity.

(i) The Developer releases the City and each officer, official and employee thereof (collectively, the "**Indemnified Parties**" and each an "**Indemnified Party**") from, agrees that the Indemnified Parties are not liable for,

and indemnifies each Indemnified Party against, all liabilities, obligations, damages, costs and expenses (including without limitation, reasonable attorneys' fees) asserted against, imposed upon or incurred by an Indemnified Party (collectively, the "**Liabilities**" and each a "**Liability**"), other than any Excluded Liability as hereinafter defined, arising out of, in connection with or resulting from the execution and delivery of this Agreement, the consummation of the transactions provided for herein and contemplated hereby, liens of subcontractors and suppliers of any tier, and all activities undertaken by the Developer or the City pursuant to this Agreement in furtherance of the development of the Project or the Public Improvements.

"**Excluded Liability**" means each Liability to the extent it is attributable to (A) the gross negligence or willful misconduct of any Indemnified Party, or (B) the failure of the City to comply with any of its obligations under this Agreement. Excluded Liabilities include, without limitation, any Liabilities settled without the Developer's consent and any Liability to the extent that the Developer's ability to defend that Liability is prejudiced materially by the failure of an Indemnified Party to give timely written notice to the Developer of the assertion of that Liability.

(ii) Upon notice of the assertion of any Liability, the Indemnified Party must give prompt written notice of the same to the Developer.

(iii) Upon receipt of written notice of the assertion of a Liability, the Developer has the duty to assume, and must assume, the defense thereof, with full power and authority to litigate, compromise or settle the same in its sole discretion; *provided that*, the Indemnified Party has the right to approve any obligations imposed upon it by compromise or settlement of any Liability or in which it otherwise has a material interest.

(iv) At its own expense, an Indemnified Party may employ separate counsel and participate in the defense of any Liability; *provided, however*, if it is ethically inappropriate for one firm to represent the interests of the Developer and the Indemnified Party, the Developer must pay the reasonable legal expenses of the Indemnified Party in connection with its retention of separate counsel. The Developer is not liable for any settlement of any Liability effected without its written consent, but if settled with the written consent of the Developer, or if there is a final judgment for the plaintiff in an action, the Developer agrees to indemnify and hold harmless the Indemnified Party except only to the extent of any Excluded Liability.

(v) This subsection (r) survives the termination of this Agreement.

(t) Payment of City's Portion of the Cost of the Work from proceeds of Bonds.

(i) Creation and Maintenance of Accounts. The City will, or will cause the Bond Trustee to, create and maintain, one or more segregated accounts (collectively, and for each Phase, a "**Construction Account**") into which proceeds

of the corresponding series of Bonds issued in accordance with Article VI will be deposited for the purpose of paying the eligible City's Portion of the Cost of the Work for each Phase of the Public Improvements. A separate account shall be created for each series of Bonds issued for a Phase of the Public Improvements.

(ii) Eligible City's Portion of the Cost of the Work; Request for Payment. The City's Portion of the Cost of the Work related to each Phase of the Public Improvements shall include: (A) the Developer's reasonable design costs, (B) construction costs, (C) costs associated with any warranties for the Public Improvements, (D) inspection and design review fees, (E) permit fees, (F) attorneys' fees which are directly related to this Agreement and are in the City's sole and reasonable determination comparable to the attorneys' fees paid by the City for similar legal services, and (G) such other related and reasonable costs as are approved by the City (which approval shall not be unreasonably conditioned, delayed or withheld). No more frequently than monthly for so long as proceeds of a series of the Bonds issued for that Phase of the Public Improvements remain in the Construction Account, the Developer may provide a Request for Payment to the City requesting payment for all or a portion of the City's Portion of the Cost of the Work of a particular Phase of the Public Improvements.

(iii) Payment for the City's Portion of the Cost of the Work. No later than thirty (30) days following receipt by the City of a Request for Payment pursuant to Section 5.4(t)(ii), the City will either (A) remit payment to the Developer in the amount requested in the Request for Payment or (B) promptly notify the Developer of any deficiency in the Request for Payment, in which case, the Parties agree to work in good faith to correct such deficiency.

(iv) No Submission During Event of Default. Pending the resolution thereof in accordance with Section 8.3, no disbursement shall be made from the Construction Account in respect of a Request for Payment following receipt by the Developer of a notice from the City that a Developer Default has occurred hereunder.

(v) Payment Obligation. This Agreement evidences the City's obligation to pay the Developer an aggregate amount equal to the Request for Payment for a Phase of the Public Improvements as reviewed and approved by the City (collectively, a "***Payment Obligation***").

Each Payment Obligation is a special obligation of the City, payable solely from and secured only by proceeds of any series of related Bonds which after payment of related financing costs, will be deposited in the Construction Account, and such Payment Obligation will be payable without the necessity of annual appropriation of money in such Account for such payment. No payment of the Payment Obligation of the City under this Agreement shall constitute an indebtedness of the City within the provisions and limitations of the laws and the Constitution of the State of Ohio, and the Developer has no right to have taxes or excises levied by the City for the payment of the Payment Obligation. In the event

that a balance remains on the Payment Obligation and no monies are available in the Construction Account, the failure to pay such balance shall not be an event of default of any kind under this Agreement and any Payment Obligation of the City of such balance shall be deemed forgiven by the Developer at that time. The City is under no obligation to issue additional series of Bonds to pay for any balances or cost overruns.

. After completion of the construction of the Public Improvements, and to the extent not otherwise owned by the City, the Developer agrees to dedicate to the City (without cost to the City) such portion of the Developer Property that constitutes the Public Improvements. The Parties agree to cooperate in filing necessary plats to dedicate the street and utility areas affected for the Public Improvements contemplated by this Agreement. The dedicated title and rights-of-way shall be free from liens or encumbrances except existing easements of record and those other matters that are approved by the City in writing, which approval shall not be unreasonably withheld, conditioned or delayed. The Parties acknowledge that the preliminary title commitments may disclose certain utility easements that may be inconsistent with or require relocation in connection with the development contemplated by this Agreement. Each Party agrees to cooperate with the other as reasonably requested to remove or relocate the affected easements and the utility facilities located therein.

The City agrees to grant to the Developer such temporary construction easements over any portions of real property owned by the City or public rights-of-way as are reasonably necessary from time to time to enable the Developer to construct and complete the Development Project and/or the Public Improvements, and shall execute and deliver to the Developer upon request from time-to-time temporary construction easements in forms satisfactory to the Developer. The Developer agrees to promptly terminate any such construction easement once the related portion of the Development Project and/or Public Improvements has been completed.

. In connection with the construction of the Public Improvements and in performing its obligations under this Agreement, the Parties agree that they shall comply with, and require all of their employees, agents, contractors and consultants to comply with, all applicable federal, state, county, municipal and other governmental statutes, laws, rules, orders, regulations, ordinances, judgments, decrees and injunctions of any court, board, agency, commission, office or other authority of any nature whatsoever for any governmental unit (federal, state, county, district, municipal, city or otherwise) whether now or hereafter in existence affecting the Public Improvements or any part thereof, or the construction, use, alteration or operation thereof, or any part thereof, whether now or hereafter enacted and in force, and all permits, licenses and authorizations and regulations relating thereto, and all covenants, agreements, restrictions and encumbrances contained in any instruments, either of record or known to each Party, at any time in force affecting the Public Improvements or any part thereof.

. The Parties agree that the expeditious completion of the Public Improvements will benefit both Parties. To that end, the Parties agree to act in good faith and in a cooperative manner to complete the Public Improvements in accordance with the terms of this Agreement. The City also agrees to act in good faith and diligently review the various applications and other matters which must be approved by the City as compliant with applicable laws and regulations in connection with the Public Improvements.

(END OF ARTICLE V)

ARTICLE VI

FINANCING OF PUBLIC IMPROVEMENTS

. The City agrees that it will proceed in good faith and with all reasonable dispatch to finance the Public Improvements, which are expected to be financed through various series of Bonds, and to perform any and all of its duties and obligations relating to the financing of the Public Improvements in a manner consistent with this Agreement in order that the financing of the various Phases of the Public Improvements will be timely completed to pay the Developer for the City's Portion of the Cost of the Work of the various Phases of the Public Improvements in accordance with this Agreement, and it will perform any and all of its duties and obligations relating to financing of the Public Improvements in a manner consistent with this Agreement.

. No later than one hundred eighty (180) days preceding the date on which the Developer expects to commence, or cause commencement of, construction of a Phase of the Public Improvements, the Developer shall provide written request to the Authorized City Representative that the City issue a series of Bonds to finance that Phase of the Public Improvements. That request shall include: (a) the estimated date on which construction of that Phase of Public Improvements will commence, (b) a description of the Public Improvements to be included within that Phase and (c) the estimated cost of the Public Improvements to be included within that Phase. No later than thirty (30) days following receipt by the City of that request, the City shall, with the assistance of the City's bond counsel and municipal advisor, evaluate the request, including supplementing the request with costs directly related to the proposed issuance of the Bonds (*i.e.*, an estimate of a debt service reserve requirement and the related financing costs), and provide a response to the Developer regarding the anticipated terms of such series of Bonds that may be issued consistent with this Agreement to finance the costs of that Phase of the Public Improvements. Following the City's provision of that response, the Parties agree to work diligently and cooperatively to complete the issuance of such series of Bonds in order that the proceeds of those Bonds will be available to the Developer for the timely completion of the applicable Phase of the Public Improvements. The Parties agree that conditions in the capital markets may impact the terms of a requested Bond issue and the Developer acknowledges and agrees that the City may rely and act upon advice from its bond counsel and municipal advisor regarding the timing, terms and method of selling the Bonds, all in a manner consistent with and pursuing the objectives of this Agreement.

. The Parties agree that prior to the City's approval of the issuance of any series of Bonds to pay the costs of a Phase of the Public Improvements, the City, together with its bond counsel and municipal advisor and the Developer, will need to evaluate the following terms:

(a) Governmental Purpose. The Phase of the Public Improvements to be financed will need to be accepted for ownership by the City, generally available for use by the public and determined by the City Council to benefit the Developer Property in a manner consistent with the TIF Ordinance. The City will also evaluate the useful life of each component of the Phase of Public Improvements to determine the maximum term for which Bonds may be issued which term shall not exceed the term of the applicable TIF Exemption.

(b) Cash Flow Related to the Payment of Debt Service on the Bonds. For purposes of evaluating the revenues available to pay Debt Service on a particular series of Bonds, the Parties shall work cooperatively to determine the following:

(i) Information Regarding the Remainder of the Development Project.

In connection with each series of Bonds proposed to be issued, the Developer shall provide to the City a written determination of (A) the remaining number of single-family residential lots to be developed as part of the Development Project (segregated into each Phase of the proposed build-out), (B) the estimated market value of homes anticipated to be constructed on each single-family residential lot remaining to be developed and (C) the estimated timing of the completion (by calendar quarter) of development of each single-family residential lot; *provided that*, the City shall be permitted to review such written determination and make reasonable adjustments thereto (*e.g.*, adjustments to market values based on comparable projects elsewhere in the City); *and provided further*, any reasonable adjustments thereto by the City shall be promptly shared in writing with the Developer; and

(ii) Aggregate CRA Exemption Valuation. The City will determine, based on the determinations in Section 6.3(b)(i), for each year in which Bonds (either then outstanding or proposed to be issued) will be outstanding, the value (in dollars) of the sum of (A) the portion of the aggregate real property tax valuation of the single-family residences theretofore constructed and which are or will be eligible for the CRA Exemption plus (B) the product of (I) the portion of the aggregate real property tax valuation of the single-family residences then expected to be constructed and which will be eligible for the CRA Exemption multiplied by (II) ninety (90%) percent (such sum being referred to as the “**Aggregate CRA Exemption Valuation**”); and

(iii) Aggregate Amount Available for Debt Service. The City will determine, based on the determination in Section 6.3(b)(ii), for each year in which Bonds (either then outstanding or proposed to be issued) will be outstanding, the value (in dollars) of the product of the then current and applicable effective rate of real property taxation multiplied by the Aggregate CRA Exemption Valuation (such product being referred to as the “**Aggregate Amount Available for Debt Service**”), and

(iv) Debt Service Coverage Requirement for the Bonds. The City will determine for each year in which Bonds (either then outstanding or proposed to be issued) will be outstanding, the value (in dollars) of (A) (I) the reasonably estimated Administrative Costs related to and (II) the Debt Service on, those Bonds and (B) the product of (I) the highest amount computed in the preceding subsection (A) multiplied by (II) the Coverage Factor (such product being referred to as the “**Debt Service Coverage Requirement**”).

(c) Maximum Bond Capacity. Based on the foregoing determinations the City will make a final determination regarding the Aggregate Amount Available for Debt

Service (per Section 6.3(b)(iii)) and the Debt Service Coverage Requirement (per Section 6.3(b)(iv)).

If the City determines that the Aggregate Amount Available for Debt Service in each year will equal or exceed the Debt Service Coverage Requirement, the City will notify the Developer and proceed with the issuance of the Bonds. In this case, the City's Portion of the Cost of the Work will represent 100% of the Cost of the Work, subject to any cost overruns which will be the responsibility of the Developer and those cost overruns will constitute the Developer's Portion of the Cost of the Work.

If the Aggregate Amount Available for Debt Service in each year will not equal or exceed the Debt Service Coverage Requirement, the City will notify the Developer and within thirty (30) days following such notice, the Developer will notify the City whether the Developer will proceed with such Phase of the Public Improvements and assume responsibility for the portion of the Cost of the Work which will not be paid from proceeds of the Bonds (such excess portion being referred to as the Developer's Portion of the Cost of the Work). If the Developer notifies the City that it will not assume responsibility for such excess portion of the Cost of the Work, the Parties agree to work cooperatively to revise the proposed Public Improvements to be financed in order that the Aggregate Amount Available for Debt Service in each year will equal or exceed the Debt Service Coverage Requirement or that the Developer will assume responsibility for the excess portion of the Cost of the Work; *provided, however*, if the Parties are unable to satisfactorily revise the proposed Public Improvements, the Parties may then work to identify other sources of funds to pay for such shortfall, or alternatively, determine not to proceed with such Phase of the Development and such Phase of Public Improvements at that time.

(d) Third-Party Administrator. The Parties agree that the City may retain a third-party administrator for purposes of preparing the calculations and making the determinations required by this Section 6.3. The fees and expenses of that third-party shall be paid as part of Administrative Costs pursuant to Section 7.6.

(END OF ARTICLE VI)

ARTICLE VII

COMMUNITY REINVESTMENT AREA AND TAX INCREMENT FINANCING DISTRICT

. The Parties acknowledge that the provision of real property tax exemptions in respect of the Developer Property will be important to facilitate the construction of the Development Project.

6. The Parties agree that:

(a) In accordance with CRA Resolution, the City currently provides real property tax exemptions of up to 100% for up to 15 years for real property located within CRA #6.

(b) The Developer agrees that in connection with the transfer of a parcel of the Developer Property upon which a single-family residence will be constructed to a builder, the Developer will include in the contract for the transfer of such parcel a provision requiring such builder to cause the end-user homeowner to file with the City, promptly following the issuance (which issuance will not be unreasonably conditioned, withheld or delayed) by the City of a certificate of occupancy for that structure, a real property tax exemption application to the City in a form prescribed by the City and in accordance with the CRA Statute; *provided, however*, such applications shall only be filed with the City between January 1 and July 31 of any calendar year.

(c) The Parties acknowledge that the CRA Statute provides that the real property tax exemption will only apply to the value of the single-family residence and appurtenant structures to be constructed upon any respective portion of the Developer Property and not the value of the underlying land.

(d) The City agrees that promptly following confirmation of an application filed in accordance with this Section 7.2, the City will approve a 100% - 15-year real property tax exemption in respect of the portion of the Developer Property upon which that single-family residence was constructed, all in accordance with CRA Resolution.

. The Developer acknowledges and agrees that the City intends to adopt the TIF Ordinance in order to create several tax increment financing incentive districts, the boundaries of which districts shall be approved by the Developer prior to the passage of the TIF Ordinance, and which will include in the aggregate all of the Developer Property and declare the improvements (as defined in Section 5709.40 of the Revised Code) to the Developer Property, as constructed with respect to each Phase of the Development Project, to be a public purpose and provide that one hundred percent (100%) of the value of such improvements shall be exempted from real property taxation for a period of time up to thirty (30) years with respect to each tax increment financing incentive district so created (each, a "*TIF Exemption*," and collectively, the "*TIF Exemptions*"), all as determined by the City Council.

The Developer hereby consents and irrevocably waives any objections the Developer may raise to the TIF Ordinance and the TIF Exemption for the Developer Property. In addition, the Developer hereby acknowledges and agrees that the Developer has no right to payment of amounts deposited in the TIF Fund for any costs incurred by the Developer related to the Public

Improvements or the Development Project. The Developer shall reasonably assist (which shall include execution thereof) the City with the filing of the DTE 24 - Application for Real Property Tax Exemption and Remission with the Ohio Department of Taxation to implement the TIF Exemption on the Developer Property as required by Section 5709.911 of the Revised Code.

The Parties agree that any CRA Exemption shall take precedence/priority over any TIF Exemption.

. The owner of each parcel comprising the Developer Property will make Statutory Service Payments for the portion of the Developer Property that it owns attributable to its period of ownership (including, without limitation, any unpaid amounts at the time the Owner acquired such parcel) pursuant to and in accordance with the requirements of the TIF Statute and the TIF Ordinance; *provided, however* that the TIF Exemption provided by the TIF Ordinance is subordinate to any applicable CRA Exemption.

The Statutory Service Payments will be made in accordance with the requirements of the TIF Statute and the TIF Ordinance and will be in the same amount as the real-property taxes that would have been charged and payable against the improvements to the Parcel (after credit for any other payments received by the City under ORC Sections 319.302, 321.24, 323.152, and 323.156, or any successor provisions thereto, as the same may be amended from time to time had the TIF Exemption not been granted, including any penalties and interest.

The Statutory Service Payments must be made semiannually to the County Treasurer (or to such County Treasurer's designated agent for collection of the Statutory Service Payments), on or before the date on which real-property taxes would otherwise be due and payable for such parcel. Any late payments will bear penalties and interest at the then current rate established under ORC Sections 323.121 and 5703.47 or any successor provisions thereto, as the same may be amended from time to time.

All Net Statutory Service Payments received by the City shall be deposited into the TIF Fund and used by the City for the purposes and in the priorities as set forth in Section 7.6.

(a) General. The Developer, while it owns any portion of the Developer Property, and on behalf of each subsequent owner of the Developer Property (or its subdivided parcels), agrees to a minimum service payment obligation pursuant to Ohio Revised Code Section 5709.91 (the "*Minimum Service Payments*"). Each owner of a parcel comprising the Developer Property shall pay to the County Treasurer such amount as will be determined by the City from time to time and certified by the City to the County Auditor in accordance with this Section 7.5, plus any costs incurred to enforce the collection of such amounts. The Minimum Service Payment due for each parcel in a calendar year is payable in two equal installments and collected at the same time as real property taxes.

(b) Computation of Minimum Service Payments. For so long as Bonds are outstanding, the Minimum Service Payment described in the foregoing Section 7.5(a) for each parcel of the Developer Property will be computed by the City as follows:

(i) Developed Parcels. For each Parcel of the Developer Property for which a certificate of occupancy for a single-family residence has been issued (each a “**Developed Parcel**”), the Minimum Service Payment for each tax year shall equal the amount (in dollars) which is the product of (A) the portion of the aggregate real property tax valuation of each such single-family residence which is then eligible for the CRA Exemption; *provided that*, if the City determines that the then available real property tax valuation for a parcel does not reflect the completion of single-family residence thereupon, the purchase price for such single-family residence may be used instead, multiplied by (B) the then current and applicable effective rate of real property taxation the then current and applicable effective rate of real property taxation. The aggregate of the Minimum Service Payments projected by the City to be collected in any calendar year in accordance with the computation pursuant to this subsection shall be referred to herein as the “**Aggregate Developed Parcels Payments**”.

(ii) Undeveloped Parcels. For any calendar year in which the City projects that the sum of the Annual Debt Service Requirement and the Administrative Costs will exceed the sum of the Aggregate Developed Parcels Payments and the Pledged Net Statutory Service Payments (such excess being referred to as the “**Debt Service Requirement Deficit**”), the City will no later than _____, provide written notice to the Developer of such Deficit, and no later than _____, the Developer will determine and provide in writing to the City the respective acreage for each Parcel of the Developer Property for which one or more certificates of occupancy for a single-family residence are eventually expected to but have not yet been issued (each an “**Undeveloped Parcel**”)(that collective acreage being referred to herein as the “**Undeveloped Residential Acreage**”) and then the City shall compute for each such Parcel the allocable portion of the Debt Service Requirement Deficit based on that Parcel’s acreage in proportion to the Undeveloped Residential Acreage, which computed amount shall be the Minimum Service Payment for that Parcel.

(c) Term of Minimum Service Payments.

(i) Each Undeveloped Parcel shall be subject to a Minimum Service Payment for so long as (A) Bonds are outstanding and (B) a TIF Ordinance which is applicable to such Parcel has been passed by City Council, and

(ii) once an Undeveloped Parcel becomes a Developed Parcel, such Parcel shall be subject to a Minimum Service Payment for so long as (A) Bonds are outstanding, (B) a CRA Exemption is applicable to such Parcel and (C) a TIF Ordinance which is applicable to such Parcel has been passed by City Council.

(d) Collection of Minimum Service Payments. For each tax year in respect of which Minimum Service Payments shall be collected, the City shall timely compute, or cause to be computed, such Minimum Service Payment for each parcel comprising the Developer Property in accordance with this Section 7.5 and shall promptly and timely thereafter certify such Minimum Service Payments to the County Auditor who shall the enter such obligation on the tax list of real property opposite the parcel against which it is

charged, and certify such Minimum Service Payment obligation to the County Treasurer for collection in the then next succeeding collection year. The Parties agree that the City may periodically retain a third-party administrator to review and reconcile the billing and collection of the Minimum Service Payments.

(e) Covenant under Ohio Revised Code Section 5709.91. The obligation to pay Minimum Service Payments shall constitute a covenant running with the land with respect to the Developer Property, however subdivided hereafter, under Ohio Revised Code Section 5709.91 pursuant to the Declaration, and upon recordation of the Declaration, such covenant shall be fully binding on behalf of and enforceable by the City against the property owner and any person acquiring an interest in the Developer Property and all successors and assigns.

(f) Use of Minimum Service Payments. All Minimum Service Payments received by the City shall be deposited into the TIF Fund and used by the City for the purposes and in the priorities as set forth in Section 7.6.

(a) . The Net Statutory Service Payments and the Minimum Service Payments on deposit in the TIF Fund shall be used by the City in the following order of priority:

(a) **first**, no later than thirty (30) days following receipt by the City of Net Statutory Service Payments or Minimum Service Payments:

(i) Pledged Net Statutory Service Payments will be used to pay, or reimburse the City for previously paid, Administrative Costs, and

(ii) to the extent any Administrative Costs remain unpaid, or if previously paid by the City but unreimbursed, Minimum Service Payments will be used to pay or reimburse the remaining Administrative Costs,

(b) **second**, to the extent not expended in **first** above, in a timely manner,

(i) Pledged Net Statutory Service Payments will be remitted to the Bond Trustee for the purpose of paying Debt Service, and

(ii) to the extent any portion of the Debt Service remains unpaid, Minimum Service Payments will be remitted to the Bond Trustee for the purpose of paying the remaining Debt Service,

(c) **third**, to the extent that any Pledged Net Statutory Service Payments or Minimum Service Payments remain after the payments in **first** and **second** above, and provided that the then current balance in the TIF Fund is at least equal to the maximum aggregate annual Debt Service for the outstanding Bonds, such amounts may be used by the City for any lawful purpose, and

(d) **fourth**, any Net Statutory Service Payments which do not constitute Pledged Net Statutory Service Payments may be used by the City for any lawful purpose.

The City agrees that while any Bonds are outstanding, the repayment of which is secured, in part, by a pledge of the Pledged Net Statutory Service Payments and the Minimum Service

Payments by the City, the City shall use all such Pledged Net Statutory Service Payments and Minimum Service Payments in the priorities set forth above to pay Debt Service on such Bonds as required by the applicable ordinance of City Council authorizing the issuance of such Bonds, and if such Bonds are issued pursuant to a trust agreement, in accordance with such trust agreement, and in all respects, consistent with the terms of this Agreement.

. Simultaneous with the execution of this Agreement, the Developer agrees to execute a Declaration of Covenants and Conditions Relative to Minimum Service Payment Obligations (the “**Declaration**”), substantially in the form attached hereto as **EXHIBIT F**, which shall be recorded with the Montgomery County Recorder’s Office prior to the commencement of construction of any portion of the Development Project, including any related Public Improvements.

It is intended and agreed, and it will be so provided by the Developer in the Declaration that the covenants provided in the Declaration are covenants running with the land and that they will, in any event and without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity for the benefit and in favor of and enforceable by the City against any owner of a portion of the Developer Property with respect to that owner’s period of ownership of that portion of the Developer Property, whether or not this Agreement remains in effect or whether or not such provision is included by an owner in any deed to such owner’s successors and assigns. It is further intended and agreed that these agreements and covenants will remain in effect for the full period of exemption permitted in accordance with the requirements of the TIF Statute and the TIF Ordinance enacted pursuant thereto.

Such covenants running with the land will have priority over any other lien or encumbrance on the Developer Property and any improvements thereon, except for such title exceptions as are approved in writing by the City. The parties acknowledge that the provisions of Ohio Revised Code Section 5709.91, which specifies that the Minimum Service Payments will be treated in the same manner as taxes for all purposes of the lien described in Ohio Revised Code Section 323.11 including, but not limited to, the priority of the lien and the collection of Minimum Service Payments, will apply to the Declaration and to the Developer Property and any improvements thereon.

(END OF ARTICLE VII)

ARTICLE II

EVENTS OF DEFAULT; REMEDIES

. Any one or more of the following shall constitute a “*Developer Default*” under this Agreement:

(a) Default by the Developer in the due and punctual performance or observance of any obligation under this Agreement and such default is not cured within thirty (30) days after written notice from the City; *provided that*, if the default is of a non-monetary nature and cannot reasonably be cured within thirty (30) days, a Developer Default shall not be deemed to occur so long as the Developer commences to cure the default within the thirty (30) day period and diligently pursues the cure for completion within a reasonable time;

(b) Any representation or warranty made by the Developer in this Agreement is false or misleading in any material respect as of the time made;

(c) The filing by the Developer of a petition for the appointment of a receiver or a trustee with respect to it or any of its property;

(d) The making by the Developer of a general assignment for the benefit of creditors;

(e) The filing of a voluntary petition in bankruptcy or the entry of an order for relief pursuant to the federal bankruptcy laws, as the same may be amended from time to time, with the Developer as debtor; or

(f) The filing by the Developer of an insolvency proceeding with respect to such party or any proceeding with respect to such party for compromise, adjustment or other relief under the laws of any country or state relating to the relief of debtors.

. Any one or more of the following shall constitute a “*City Default*” under this Agreement:

(a) Default by the City in the due and punctual performance or observance of any obligation under this Agreement and such default is not cured within thirty days after written notice from the Developer; *provided that*, if the default is of a non-monetary nature and cannot reasonably be cured within thirty days, a City Default shall not be deemed to occur so long as the City commences to cure the default within the thirty day period and diligently pursues the cure for completion within a reasonable time;

(b) Any representation or warranty made by the City in this Agreement is false or misleading in any material respect as of the time made; or

(c) The filing of a voluntary petition in bankruptcy or the entry of an order for relief pursuant to the federal bankruptcy laws, as the same may be amended from time to time, with the City as debtor.

Section 2.3 Remedies.

(a) In the event that the Developer shall create or suffer a Developer Default under this Agreement which remains uncured as aforesaid, or in the event that the City shall create or suffer a City Default under this Agreement which remains uncured as aforesaid, or in the event of any dispute arising out of or relating to this Agreement which does not necessarily rise to the level of a default hereunder, then absent facts or circumstances which compel a Party's pursuit of immediate injunctive or other equitable relief, the Parties agree to and shall first proceed as follows prior to pursuit of any other remedies hereunder, in equity or at law:

(i) the complaining Party shall notify the other Party of the dispute and/or claimed default, and thereafter the Parties shall undertake good faith discussions for the purpose of resolving the dispute and/or the issues giving rise to the claimed default; and

(ii) if the dispute and/or the issues giving rise to the claimed default are not resolved by such good faith discussions within thirty (30) days after such notice is provided under foregoing clause (i), or such longer period during which any good faith discussions are continuing, then, upon the request of either Party by written notice to the other Party, mediation shall be initiated through the use of a mutually-acceptable neutral mediator not affiliated with either of the Parties, and thereafter the Parties shall proceed in good faith with such mediation for the purpose of resolving the dispute and/or the issues giving rise to the claimed default. If the Parties are unable to agree upon a neutral mediator, then either Party may solicit the Administrative Judge of the Common Pleas Court of Montgomery County, Ohio to appoint the mediator. If the dispute and/or the issues giving rise to the claimed default are not resolved within thirty (30) days after the identification or appointment of the mediator, then the Parties may pursue their other remedies hereunder, in equity or at law. Each Party shall pay its own costs and one-half (1/2) of the mediator's fees and expenses in connection with any such mediation. The Developer acknowledges that before the Parties may proceed with mediation in accordance with this Section 8.3(a), City Council must first authorize and appropriate sufficient monies to pay the City's portion of the cost.

(b) In the event that the Developer shall create or suffer a Developer Default under this Agreement and the Parties are unable to resolve all issues arising out of such a Developer Default in accordance with the discussion and mediation provisions set forth in Section 8.3(a) above, then, in addition to any other rights or remedies available to the City hereunder, in equity or at law, the City, at its option, shall have the right to cancel and terminate this Agreement by written notice to the Developer.

(c) In the event that the City shall create or suffer a City Default under this Agreement and the Parties are unable to resolve all issues arising out of such a City Default in accordance with the discussion and mediation provisions set forth in Section 8.3(a) above, then, in addition to any other rights or remedies available to the Developer hereunder, in equity or at law, the Developer, at its option, shall have the right to cancel and terminate this Agreement by written notice to the City.

. Subject to Section 8.3, the Parties each have the further right to institute any actions or proceedings (including, without limitation, actions for specific performance, injunction or other equitable relief) as it may deem desirable for effectuating the purposes of, and its remedies under, this Agreement; *provided*, that any delay by any Party in instituting or prosecuting any actions or proceedings or otherwise asserting its rights under this Agreement will not operate as a waiver of those rights or to deprive it of or limit those rights in any way; nor will any waiver in fact made by either Party with respect to any specific default or breach by any other Party under this Agreement be considered or treated as a waiver of the rights of that Party with respect to any other defaults by the other Party or with respect to the particular default or breach except to the extent specifically waived in writing. It is the further intent of this provision that no Party should be constrained, so as to avoid the risk of being deprived of or limited in the exercise of any remedy provided in this Agreement because of concepts of waiver, laches, or otherwise, to exercise any remedy at a time when it may still hope otherwise to resolve the problems created by the default involved.

. Except as otherwise provided herein, no Party will be considered in default in or breach of its obligations to be performed hereunder if delay in the performance of those obligations is due to unforeseeable causes beyond its control and without its fault or negligence, including but not limited to, acts of God, acts of terrorism or of the public enemy, acts or delays of the other party, fires, floods, unusually severe weather, epidemics, freight embargoes, unavailability of materials, strikes or delays of contractors, subcontractors or materialmen but not including lack of financing capacity; it being the purpose and intent of this paragraph that in the event of the occurrence of any such enforced delay, the time or times for performance of obligations shall be extended for the period of the enforced delay; *provided, however*, that the Party seeking the benefit of the provisions of this Section must, within a reasonable period following commencement of the enforced delay, notify the other Party in writing of the delay and of the cause of the delay and of the duration of the delay or, if a continuing delay and cause, the estimated duration of the delay, and if the delay is continuing on the date of notification, within thirty (30) days after the end of the delay, notify the other Parties in writing of the duration of the delay. Delays or failures to perform due to lack of funds shall not be deemed unforeseeable delays.

(END OF ARTICLE VIII)

ARTICLE III

MISCELLANEOUS

. This Agreement may not be assigned without the prior written consent of all non-assigning Parties.

. The provisions of this Agreement are binding upon the successors or permitted assigns of the Parties, including successive successors and assigns. The Parties acknowledge that all matters subject to the approval of City Council will be approved or disapproved in City Council's sole discretion. Notwithstanding the foregoing, the effectiveness and enforceability of this Agreement shall be conditioned upon the acquisition of fee ownership of the Property by Developer or subsidiary of Developer. Until such time as Developer or its subsidiary acquires fee ownership of the Property, Developer shall have no rights or obligations under this Agreement.

. The captions and headings in this Agreement are solely for convenience of reference and in no way define, limit or describe the scope of the intent of any article, section, subsection, clause, exhibit or appendix of this Agreement.

. Wherever herein there is a day or time period established for performance and the day or the expiration of the time period is a Saturday, Sunday or legal holiday, then the time for performance will be automatically extended to the next business day.

. The City hereby acknowledges that, from time to time during the development of the Development Projects, the Developer, including any successor thereto, will obtain financing in connection with a respective portion of the Development Project which will be secured in whole or in part by assignments, pledges or mortgages of the Developer's interests (including any successor's interest as the case may be) in the Developer Property (each a "***Developer Mortgage***"). In connection therewith, the City agrees to and shall cooperate with the Developer to provide to the holder of any such Developer Mortgage (each a "***Developer Mortgage***") such reasonable factual representations and/or consents regarding this Agreement and/or the Developer's rights hereunder as such Developer Mortgagee may request from time to time. By way of example, such reasonable factual representations and/or consents may take the form of: (a) estoppel certificates certifying that this Agreement is unmodified and in full force and effect (or if there have been modifications that it is in full force and effect as modified and stating the modifications), that neither the City nor the Developer is in default in the performance of any obligations under this Agreement (or specifying any such default of which the City has knowledge), and certifying as to other facts as reasonably requested by such Developer Mortgagee; and/or (b) consents to the collateral assignment of certain of the Developer's rights under or in respect of this Agreement. Any such requested assurance and/or consent shall be in a form reasonably approved by the City, and the City shall endeavor reasonably to respond to any such request in a prompt and timely manner. The Developer shall pay on behalf of the City any reasonable fees and expenses incurred by the City in connection with any request pursuant to this Section.

. Except as otherwise required by the City Codified Ordinances, any documents required to be submitted to the City pursuant to this Agreement shall be submitted to the Authorized City Representative or such other City department as may be directed by the Authorized City Representative.

. The Developer has made no false statements to the City in the process of obtaining approval of the incentives described in this Agreement. If any representative of the Developer has knowingly made a false statement to the City to obtain the incentives described in this Agreement, the Developer shall be required to immediately return all benefits received under this Agreement pursuant Ohio Revised Code Section 9.66(C)(2) and shall be ineligible for any future economic development assistance from the State, any State agency or a political subdivision pursuant to Ohio Revised Code Section 9.66(C)(1). The Developer acknowledges that any person who provides a false statement to secure economic development assistance may be guilty of falsification, a misdemeanor of the first degree, pursuant to Ohio Revised Code Section 2921.13(F)(1), which is punishable by a fine of not more than \$1,000 and/or a term of imprisonment of not more than six months.

. This Agreement, including the exhibits and the corollary agreements contemplated hereby, embodies the entire agreement and understanding of the Parties relating to the subject matter herein and therein and may not be amended, waived or discharged except in an instrument in writing executed by the Parties.

. This Agreement may be executed in several counterparts, each of which will be deemed to constitute an original, but all of which together constitute but one and the same instrument. It is not necessary in proving this Agreement to produce or account for more than one of those counterparts.

. All covenants, obligations and agreements of the Parties contained in this Agreement are effective to the extent authorized and permitted by applicable law. No member, official or employee of the City shall have a personal interest, direct or indirect, in this Agreement, nor shall any such member, official or employee participate in any decision relating to this Agreement that affects his personal interest or the interests of any corporation, partnership or association in which he is, directly or indirectly, interested. No covenant, obligation or agreement may be deemed to be a covenant, obligation or agreement of any present or future member, officer, agent, director, member or employee of the City or the Developer, or its successors or permitted assigns, other than in his or her official capacity, and neither the members of the legislative body of the City nor any official executing this Agreement nor any present or future member, officer, agent, director or employee of the Developer, or its successors or permitted assigns, are liable personally under this Agreement or subject to any personal liability or accountability by reason of the execution hereof or by reason of the covenants, obligations or agreements of the City and the Developer contained in this Agreement.

. This Agreement is governed by and is to be construed in accordance with the laws of the State of Ohio or applicable federal law. All claims, counterclaims, disputes and other matters in question between the City, its agents and employees and the Developer, its employees and agents, arising out of or relating to this Agreement or its breach will be decided in a court of competent jurisdiction within Montgomery County, Ohio.

. Notwithstanding any clause or provision of this Agreement to the contrary, in no event will the City or the Developer, or its successors or permitted assigns, be liable to each other for punitive, special, consequential or indirect damages of any type and regardless of whether those damages are claimed under contract, tort (including negligence and strict liability) or any other theory of law unless otherwise expressly agreed by the Party against which the damages could be assessed.

. Except relative to a permitted assignee pursuant to an assignment effected pursuant to Section 9.1, nothing expressed or mentioned in or to be implied from this Agreement is intended or shall be construed to give to any person other than the Parties, any legal or equitable right, remedy, power or claim under or with respect to this Agreement or any covenants, agreements, conditions and provisions contained herein. This Agreement and all of those covenants, agreements, conditions and provisions are intended to be, and are, for the sole and exclusive benefit of the Parties hereto, as provided herein. With the exception of the Parties and any assignee effected pursuant to Section 9.1, it is not intended that any other person or entity shall have stood to enforce, or the right to seek enforcement by suit or otherwise of any provision of this Agreement whatsoever.

. Except as otherwise specifically set forth in this Agreement, all notices, demands, requests, consents or approvals given, required or permitted to be given hereunder must be in writing and will be deemed sufficiently given if actually received or if hand-delivered or sent by recognized, overnight delivery service or by certified mail, postage prepaid and return receipt requested, addressed to the recipient at the Notice Address, or to another address of which the recipient has previously notified the sender in writing, and the notice will be deemed received upon actual receipt, unless sent by certified mail, in which case the notice will be deemed to have been received when the return receipt is signed or refused. Any process, pleadings, notice or other papers served upon any Party must be sent by registered or certified mail at its Notice Address, or to another address or addresses as may be furnished by one party to the other.

. No right or remedy herein conferred upon or reserved to any Party is intended to be exclusive of any other right or remedy, and each and every right or remedy shall be cumulative and in addition to any other right or remedy given hereunder, or now or hereafter legally existing upon the occurrence of any event of default hereunder. The failure of any Party to insist at any time upon the strict observance or performance of any of the provisions of this Agreement or to exercise any right or remedy as provided in this Agreement shall not impair any such right or remedy or be construed as a waiver or relinquishment thereof. Every right and remedy given by this Agreement to the Parties hereto may be exercised from time to time and as often as may be deemed expedient by the parties hereto, as the case may be.

. The Parties acknowledge and agree that the facts and circumstances as described in the Recitals hereto and the information contained in the Exhibits hereto are an integral part of this Agreement and as such are incorporated herein by reference.

. If any provision of this Agreement, or any covenant, obligation or agreement contained herein is determined by a court to be invalid or unenforceable, that determination will not affect any other provision, covenant, obligation or agreement contained herein, each of which will be construed and enforced as if the invalid or unenforceable portion were not contained herein. If any provision, covenant, obligation or agreement contained herein is subject to more than one interpretation, a valid and enforceable interpretation is to be used to make this Agreement effective. That invalidity or unenforceability will not affect any valid and enforceable application, and each provision, covenant, obligation or agreement will be deemed to be effective, operative, made, entered into or taken in the manner and to the full extent permitted by law.

. All representations and warranties of the Parties in this Agreement shall survive the execution and delivery of this Agreement.

(END OF ARTICLE IX – SIGNATURE PAGES TO FOLLOW)

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed in their respective names by their duly authorized representatives, all as of the date first written above.

CITY OF HUBER HEIGHTS, OHIO

By: _____

Printed: John Russell

Title: City Manager

Approved as to Form and Correctness:

By: _____

Printed: Christopher R. Conard

Title: City Attorney

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed in their respective names by their duly authorized representatives, all as of the date first written above.

GREYFOXCREEKSIDE LLC

By: _____

Printed: _____

Title: _____

FISCAL OFFICER’S CERTIFICATE

The undersigned, Director of Finance of the City of Huber Heights, Ohio under the foregoing Agreement, certifies hereby that the moneys required to meet the obligations of the City during the year 2024 under the foregoing Agreement have been appropriated lawfully for that purpose, and are in the Treasury of the City or in the process of collection to the credit of an appropriate fund, free from any previous encumbrances. This Certificate is given in compliance with Ohio Revised Code Sections 5705.41 and 5705.44.

Dated: _____, 2025

James A. Bell
Director of Finance
City of Huber Heights, Ohio

EXHIBIT A

DEPICTION OF DEVELOPER PROPERTY

5425 Charlesgate Road
Huber Heights, Ohio 45424

Montgomery County Auditor's Parcel # P70 01924 0003

EXHIBIT B
FORM OF REQUEST FOR PAYMENT

To: City of Huber Heights, Ohio

Attention : Director of Finance

Subject : Request for Reimbursement for Public Improvements pursuant to the terms of the Development Agreement, dated _____, 2025 (the "**Agreement**") by and between the City of Huber Heights, Ohio and GreyFoxCreekside LLC (the "**Developer**").

You are hereby requested to approve payment in the amount of \$_____ representing [all/a portion] of the City's Portion of the Cost of the Work for Phase ___ of the Public Improvements. All capitalized terms used in this Request for Payment have the meanings assigned to them in the Agreement unless otherwise defined herein.

The undersigned authorized representative of the Developer does hereby certify on behalf of the Developer that:

1. I have read the Agreement and definitions relating thereto and have reviewed appropriate records and documents of the Developer relating to the matters covered by this Request for Payment.

2. The City's Portion of the Cost of the Work herein requested for approval for Phase ___ of the Public Improvements is a proper charge as a City's Portion of the Cost of the Work for Phase ___ of the Public Improvements (as defined in the Agreement) to be paid by the Developer or its designee in respect of such Public improvements. The amount and nature of the City's Portion of the Cost of the Work for Phase ___ of the Public Improvements to be paid, together with copies of the related invoices, are shown on a schedule attached hereto.

3. The Developer is in material compliance with all provisions and requirements of the Agreement, including, but not limited to, all prevailing wage requirements (attached hereto are the required prevailing wage affidavits).

4. The City's Portion of the Cost of the Work included herein does not include any amount which is being retained under any holdbacks or retainages provided for in any applicable agreement.

5. The Developer or the appropriate parties on the Developer's behalf has or have asserted its entitlement to all available manufacturer's warranties to date upon acquisition of possession of or title to those Public Improvements or any part thereof, which warranties have vested in the City. Proof of all such warranties is attached hereto.

6. There are no outstanding mechanic's or materialman's liens from any contractors, subcontractors, materialmen and suppliers (which would not include sellers of machinery and equipment) who have provided services or materials for portion of the Public Improvements that

are the subject of this Request for Payment. Attached hereto are (i) conditional lien waivers and releases from any contractors, subcontractors, materialmen and suppliers to be paid from the payment resulting from this Request for Payment; and (ii) unconditional lien waivers from any contractors, subcontractors, materialmen and suppliers, which have not heretofore been provided, who have provided services or materials to the Phase ___ Public Improvements and were paid pursuant to a prior Request for Payment, provided that if this is a request for final payment, then Developer shall provide unconditional lien waivers from any contractors, subcontractors, materialmen and suppliers as a condition of final payment.

EXECUTED THIS _____ DAY OF _____, 202__

GREYFOXCREEKSIDE LLC

By: _____

Printed: _____

Title: _____

EXHIBIT C

DESCRIPTION AND DEPICTION OF ESTIMATED PUBLIC IMPROVEMENTS

Phase 1 Public Improvements

ITEM	PHASE 1 QTY		
Earth Import	61060		
Sanitary Sewer Main	2908		
Sanitary Lateral	99		
Storm Sewer	3278		
Water Main	3185		
Water Lateral	95		
Pavement	4995		
Construction Cost	\$ 3,280,209.10		

Total Cost of Phase 1 Public Improvements - \$3,608,230.01
(With 10% Contingency)

Phase 2 Public Improvements

ITEM		PHASE 2 QTY	
Earth Import		35783	
Sanitary Sewer Main		1496	
Sanitary Lateral		60	
Storm Sewer		1974	
Water Main		823	
Water Lateral		66	
Pavement		3504	
Construction Cost		\$ 1,700,557.43	

Total Cost of Phase 2 Public Improvements - \$1,870,613.17
(With 10% Contingency)

EXHIBIT D

PERSONAL PROPERTY TAX AFFIDAVIT (O.R.C. 5719.042)

State of Ohio

County of _____, ss:

_____, being first duly sworn, deposes and says that he/she is the
(Name)

_____ of _____
(Title) (Name and Address of Contractor)

_____ (the
"Contractor") and as its duly authorized representative, states that effective this ____ day of
_____, 202__, the Contractor:

() is charged with delinquent personal property taxes on the general list of personal property as set forth below:

<u>County</u>	<u>Amount</u> (include total amount penalties and interest thereon)
_____ County	\$ _____
_____ County	\$ _____
_____ County	\$ _____

() is not charged with delinquent personal property taxes on the general list of personal property in any Ohio county.

(Affiant)

Sworn to and subscribed before me by the above-named affiant this ____ day of _____, 202__.

(Notary Public)

My commission expires
_____, 202__

EXHIBIT E

**DECLARATION OF COVENANTS AND IMPOSITION OF
CONTINUING PRIORITY LIEN
(Revised Code Section 5709.91 Tax Lien)**

This **DECLARATION OF COVENANTS AND IMPOSITION OF CONTINUING PRIORITY LIEN** (this “*Declaration*”) is made by **GREYFOXCREEKSIDE LLC**, an Ohio Limited Liability Corporation (the “*Declarant*”), whose address is 6161 Oak Tree Boulevard, Suite 250, Independence, Ohio 44131, which, for good and valuable consideration, the receipt of which is hereby acknowledged, including, without limitation, the undertaking by the **CITY OF HUBER HEIGHTS, OHIO** (the “*City*”), whose address is 6131 Taylorsville Road, Huber Heights, Ohio 45424, to provide financing to pay or reimburse the Declarant (as the “*Developer*”) for costs of the public infrastructure improvements made by or paid for by the Developer in the **Montgomery County TIF District** pursuant to and as further described in the Development Agreement by and between the Developer and the City dated as of _____, 2025 (the “*Development Agreement*”), makes the covenants set forth herein and encumbers the following real property (the “*Parcels*”):

Montgomery County Auditor’s Parcel #P70 01924 0003 situated in the City of Huber Heights, Montgomery County, Ohio, and being more particularly described in **EXHIBIT A** attached to this Declaration and made a part hereof,

TOGETHER WITH any of the following items either now or in the future located on, affixed to, used in the operation of, or otherwise benefiting the land (or any part of the land) described above: all buildings, structures and improvements; all fixtures used in the operation of the real estate; all easements, rights-of-way, licenses, privileges and other appurtenances; and all proceeds thereof (collectively with the *Parcels*, the “*Property*”).

The City and the Declarant agree that it is necessary and appropriate and in the best interests of the City and the Declarant to provide for the owner of the Property (the “*Owner*,” and if there are multiple owners of the *Parcels*, each an “*Owner*” and, collectively, the “*Owners*”) to make the payments described in this Declaration to secure the repayment of the principal of and interest on (the “*Debt Service*”) on certain special obligation bond anticipation notes or bonds (the “*Bonds*”) issued by the City for the purpose of paying the costs of certain public infrastructure improvements which will facilitate the development of the Property (as is more fully described in the Development Agreement). The Declarant is the current Owner of the *Parcels* identified above.

The Declarant and the City further covenant as follows:

Section 1. **Community Reinvestment Area Exemption**. In accordance with Ohio Revised Code (“*ORC*”) Sections 3735.65 *et seq.* and certain resolutions adopted by the City Council of the City (collectively, the “*CRA Resolution*”), the City has authorized the provision of real property tax exemptions of up to 100% for up to 15 years for the value of each single-family

residence and appurtenant structures to be constructed upon any respective portion of the Property and not the value of the underlying land (each a “**CRA Exemption**”).

Section 2. **Statutory Service Payments.** Each Owner will make the service payments in lieu of taxes (the “**Statutory Service Payments**”) for the portion of the Property that it owns attributable to its period of ownership (including, without limitation, any unpaid amounts at the time the Owner acquired the Property) pursuant to and in accordance with the requirements of ORC Sections 5709.40 *et seq.* (the “**TIF Statute**”) and City Ordinance No. 202__-O-____, passed by City Council on _____, 202__ (the “**TIF Ordinance**”).

The Statutory Service Payments will be made in accordance with the requirements of the TIF Statute and the TIF Ordinance and will be in the same amount as the real-property taxes that would have been charged and payable against the Property (after credit for any other payments received by the City under ORC Sections 319.302, 321.24, 323.152, and 323.156, or any successor provisions thereto, as the same may be amended from time to time (the “**Property Tax Rollback Payments**”)) had the exemption granted by the TIF Ordinance not been granted, including any penalties and interest.

The Statutory Service Payments must be made semiannually to the County Treasurer of Montgomery County, Ohio (the “**County Treasurer**”)(or to such County Treasurer’s designated agent for collection of the Statutory Service Payments), on or before the date on which real-property taxes would otherwise be due and payable for the Parcels. Any late payments will bear penalties and interest at the then current rate established under ORC Sections 323.121 and 5703.47 or any successor provisions thereto, as the same may be amended from time to time.

For any Parcel in respect of which a CRA Exemption applies, the CRA Exemption shall take priority over any real property tax exemption authorized by the TIF Ordinance and no Statutory Service Payment or Property Tax Rollback Payments shall be due in respect of such portion of the assessed valuation of a Parcel which is concurrently eligible for a CRA Exemption.

The Statutory Service Payments, net of those payments which are required to be paid pursuant to the TIF Statute and the TIF Ordinance to any other taxing authority, including but not limited to, the Huber Heights City School District and the Miami Valley Career Technology Center, and (a) to the extent such Payments are in respect of a Developed Parcel (as defined below) and relate to a tax year in respect of which a CRA Exemption also applied to that Developed Parcel and (b) to the extent such Payments are in respect of an Undeveloped Parcel (as defined below), will be pledged to the payment of Administrative Costs (as defined in the Development Agreement) and to pay the Debt Service on the Bonds.

Section 3. **Minimum Service Payments.** Pursuant to Ohio Revised Code Section 5709.91, with respect to its period of ownership of the Property (including, without limitation, any unpaid amounts at the time each Owner acquired the Property), each Owner shall pay to the County Treasurer, or alternatively, if notified in writing by the City, to a bond trustee designated by the City from time to time (a “**Bond Trustee**”), as minimum service payments (each a “**Minimum Service Payment**”) its designated amount as described below, plus any costs incurred to enforce

the collection of such Minimum Service Payments, with respect to each Parcel comprising part of the Property or such lesser amount allocated to each portion of the Property (and each Owner) upon a split of tax Parcels as set forth below. The Minimum Service Payments will be pledged to pay the Administrative Costs and the Debt Service on the Bonds.

The Minimum Service Payment for each Parcel of the Property shall be calculated as follows:

(a) Minimum Service Payment for Developed Parcels. For each Parcel of the Property for which a certificate of occupancy for a single-family residence has been issued (each a “***Developed Parcel***”), the Minimum Service Payment for each tax year shall equal an amount (in dollars) which is the product of (a) the portion of the aggregate real property tax valuation of such single-family residence which is then eligible for the CRA Exemption; *provided that*, if the City determines that the then available real property tax valuation for such parcel does not reflect the completion of single-family residence thereupon, the purchase price for such single-family residence may be used instead, multiplied by (b) the then current and applicable effective rate of real property taxation. The aggregate of the Minimum Service Payments projected by the City to be collected in any calendar year in accordance with the computation in this paragraph shall be referred to herein as the “***Aggregate Developed Parcels Payments***”.

(b) Minimum Service Payment for Undeveloped Parcels. For any calendar year in which the City projects that the sum of Administrative Costs and the aggregate Debt Service on all Bonds which have been issued and remain outstanding (referred to in the Development Agreement and herein as the “***Annual Debt Service Requirement***”) will exceed the sum of the Aggregate Developed Parcels Payments and the Pledged Net Statutory Service Payments (each as defined in the Development Agreement with such excess being referred to in the Development Agreement and herein as the “***Debt Service Requirement Deficit***”), the City will no later than _____, provide written notice to the Developer of such Deficit, and no later than _____, the Developer will determine and provide in writing to the City the respective acreage for each Parcel of the Developer Property for which one or more certificates of occupancy for a single-family residence are eventually expected to but have not yet been issued (each an “***Undeveloped Parcel***”)(that collective acreage being referred to herein as the “***Undeveloped Residential Acreage***”) and then the City shall compute for each such Parcel the allocable portion of the Debt Service Requirement Deficit based on that Parcel’s acreage in proportion to the Undeveloped Residential Acreage, which computed amount shall be the Minimum Service Payment for that Parcel.

(c) Other Minimum Service Payments. In addition to the Minimum Service Payment amounts set forth in the two preceding paragraphs, each Owner shall be required to pay any costs incurred to enforce the collection of such Minimum Service Payment with respect to each Parcel comprising the Property or such lesser amount allocated to each portion of the Property (and each Owner) upon split of tax Parcels as set forth below.

Each year, the City shall determine the amounts of the Minimum Service Payments due and certify such amounts to the County Auditor of Montgomery County, Ohio (the “*County Auditor*”) by no later than September 1 of each year. The County Auditor shall include such Minimum Service Payment due in each property tax bill for the Parcel for the following year. The Minimum Service Payment due for each Parcel in a calendar year will be payable in two equal installments and will be collected at the same time and in the same manner as real property tax payments.

Each Undeveloped Parcel shall be subject to a Minimum Service Payment for so long as Bonds are outstanding. Once an Undeveloped Parcel becomes a Developed Parcel, such Parcel shall be subject to a Minimum Service Payment only for so long as Bonds are outstanding and a CRA Exemption is applicable to such Parcel.

Section 4. **Binding Nature of Obligations.** Each of Owner’s obligations under this Declaration, including without limitation its obligation to make Statutory Service Payments and Minimum Service Payments, are absolute and unconditional covenants running with the land and are binding and enforceable by the City and any Bond Trustee. Except as provided in this Declaration, the Owner shall make all Statutory Service Payments and Minimum Service Payments without abatement, diminution or deduction, regardless of any cause or circumstances whatsoever, including, without limitation, any defense, set-off, recoupment or counterclaim which the Owner may have or assert against the City, or anyone acting by or on behalf of the City, or damage to or destruction of the Property.

Declarant, on behalf of itself and each subsequent Owner, agrees that each of its covenants contained in this Declaration, including without limitation, the obligation to make Statutory Service Payments and Minimum Service Payments, is a covenant running with the land and that they will, in any event and without regard to technical classification or designation, legal or otherwise, be binding to the fullest extent permitted by law and equity, for the benefit and in favor of, and enforceable by, the City or any Bond Trustee against the Property and each Owner, without regard to whether the City has at any time been, remains or is an owner of any land or interest therein to, or in favor of, which these covenants relate. The City and any Bond Trustee each has the right in the event of any breach of any covenant herein contained, including without limitation the Owner’s obligation to make Statutory Service Payments and Minimum Service Payments, to exercise all legal and equitable rights and remedies and to maintain all actions or suits at law or in equity as against the Owner and any transferee, successor and assign thereof as may be necessary to enforce the Owner’s obligations hereunder, and to maintain all other proper proceedings to which the City and/or any Bond Trustee may be entitled to cure that breach.

Declarant, on behalf of itself and each subsequent Owner, further agrees that (a) all covenants herein, including without limitation its obligation to make Statutory Service Payments and Minimum Service Payments, whether or not these covenants are included by the Declarant in any deed to its successors and assigns, are binding upon each subsequent Owner and are enforceable by the City and the Bond Trustee for the Bonds, and (b) any future Owner of the

Property, or any successors or assigns of the Declarant or such Owner, will be treated as an Owner for all purposes of this Declaration.

Subject to Section 10, the Declarant, on behalf of itself and each subsequent Owner, further agrees that its covenants herein, including without limitation its obligation to make Statutory Service Payments and Minimum Service Payments, will remain in effect so long as the Statutory Service Payments and Minimum Service Payments can be collected pursuant to the TIF Statute and ORC Section 5709.91, respectively, the TIF Ordinance, or this Declaration unless otherwise modified or released in writing by the City in a written instrument filed in the Official Records of the County Recorder of Montgomery County, Ohio following full and final payment of all Bonds.

Section 5. **Exemption Applications.** The City and each Owner will cooperate in the preparation, execution and filing of all applications for real property tax exemption, including the real property tax exemption granted by the TIF Ordinance and the CRA Exemption, together with other required documents and information with the appropriate officials of the State of Ohio and Montgomery County, Ohio as required to effect the exemption from real property taxation as provided by the TIF Ordinance. The City agrees to cooperate and to execute those further documents and provide that further information as are reasonably required in connection therewith. The Owner will continuously use due diligence and employ commercially reasonable efforts to keep the exemption under the TIF Ordinance in force, not permitting the same to lapse or be suspended or revoked for any reason within the Owner's control.

The Owner shall not file an application for real-property tax exemption as to any Parcels under any provision of law other than pursuant to the CRA Statute or the TIF Statute without the express prior written consent of the City. In the event that the Owner fails to timely file any application for a real property tax exemption required by ORC Section 5709.911, the Owner's execution of this Declaration, and any subsequent Owner's acceptance of the conveyance of any of the Property, shall be deemed to constitute the Owner's written consent to an application filed by the City in accordance with ORC Section 5709.911. In the event that, subsequent to allowance of the exemption under the TIF Ordinance, the same is at any time revoked or suspended or the obligation to make Statutory Service Payments becomes unenforceable pursuant to ORC Section 5709.911(D), then the Owner will nevertheless continue to make Minimum Service Payments.

Section 6. **Maintenance of TIF by City.** The City will not, so long as this Declaration remains effective, and without the consent of the Owner:

- (a) transfer, encumber, spend, use, commit or pledge the Statutory Service Payments or Minimum Service Payments in any way other than pursuant to the Development Agreement; or
- (b) amend, repeal, supplement, or supersede the TIF Ordinance, this Declaration or the Development Agreement in any way that would reduce the amount of Minimum Service Payments available pursuant to the Development Agreement.

Section 7. **Default; Remedies.** The following are events of default under this Declaration (with respect to Owners, the following are events of default only with respect to the defaulting Owner):

(a) The failure of the Owner to pay on its due date any Statutory Service Payment or Minimum Service Payment, or any installment thereof, including any applicable late payment charges, which failure continues for more than thirty (30) days following delivery of a written notice of default thereof by the City;

(b) The failure of the Owner to perform or observe any other covenant made by it in this Declaration, which failure continues for more than thirty (30) days following delivery of a written notice of default thereof by the City or such longer period as is needed to cure the failure using reasonable diligence, provided that such cure is initiated during the original thirty (30) day period;

(c) The failure by the City to observe its covenants set forth in Section 6;

(d) The filing by the Owner of a petition for the appointment of a receiver or a trustee with respect to it or any of its property;

(e) The making by the Owner of a general assignment for the benefit of creditors;

(f) The entry of an order for relief pursuant to any Chapter of Title 11 of the U.S. Code, as the same may be amended from time to time, with the Owner as debtor; or

(g) The filing by the Owner of an insolvency proceeding with respect to itself or any proceeding with respect to the Owner for compromise, adjustment or other relief under the laws of any country or state relating to the relief of debtors.

The provisions of this Declaration may be enforced, alone or together, to the fullest extent permitted by law, against the defaulting party by the City, any Bond Trustee or the Owner. As the remedy at law for the breach of any of the terms of this Declaration may be inadequate, each enforcing party has a right of temporary and permanent injunction, specific performance and other equitable relief that may be granted in any proceeding brought to enforce any provision hereof, without the necessity of proof of actual damage or inadequacy of any legal remedy. The waiver of any default by a party does not constitute a waiver by all parties or a waiver of other defaults. All rights and remedies granted herein are cumulative, non-exclusive and in addition to any and all rights and remedies that the City, any Bond Trustee or the Owner may have or may be given by reason of any law, statute, or otherwise, and no failure to exercise or delay in exercising any remedy shall effect a waiver of such party's right to exercise such remedy thereafter.

In addition to its other remedies, if an Event of Default under Section 7(a) occurs, the City may assess as part of the Minimum Service Payment then due a penalty equal to 10% of the overdue amount. That penalty may be assessed at any time on or after occurrence of an Event of Default. In addition, the City may charge as part of the Minimum Service Payment installment

interest on the overdue amount at a maximum rate of ten percent (10%) per year, calculated on the basis of a 365- or 366-day year, as applicable, for the actual days elapsed until payment. Interest may be compounded semi-annually. The City or any Bond Trustee, on behalf of the City may certify any overdue Minimum Service Payment installment, including penalties and interest, to the County Auditor for collection on real-property tax bills. Any Minimum Service Payment installment so certified may be subject to additional penalties and interest imposed by the County Treasurer if real property tax bills containing such Minimum Service Payment installments are not paid when due. Any amounts actually recovered by the City due to the payment in full of delinquent Minimum Service Payments, and any interest and penalties imposed by the County Treasurer associated with such delinquent Minimum Service Payments, shall be credited against the penalty due under this paragraph.

It is the further intention and agreement of the Declarant, as owner of fee title to the Property and on behalf of all future Owners, that this Declaration constitutes and be deemed to be a lien encumbering and running with the Property to secure the obligations of the Owner to make Statutory Service Payments and Minimum Service Payments (and, if applicable, pay interest and penalties) and perform other obligations under this Declaration, and is intended to have the same lien rights and same priority as real estate taxes, and the Owner will not contest those lien rights or priority. In furtherance of the foregoing, any of the City or any Bond Trustee may, upon the Owner's default of its obligations, and without limiting any other right or remedy otherwise available to the City or any Bond Trustee, foreclose upon that lien pursuant to the procedures and requirements of Ohio law relating to mortgages, liens, or delinquent real estate taxes, and the Owner will not contest the validity of any such lien or procedures, or any claim by the City or any Bond Trustee that the Minimum Service Payments constitute "minimum service payment obligations" for purposes of ORC Section 5709.91. In the event that a Parcel is subject to a tax lien foreclosure action initiated by a party other than the City that would foreclose the lien created by this Declaration, the City or any Bond Trustee may declare immediately due and payable all Minimum Service Payments due in the then current year or any future year for that Parcel. The City or any Bond Trustee shall rescind any such declaration of acceleration at the request of the Owner or any mortgagee of the Property at such time as the lien created by this Declaration is no longer subject to such foreclosure action. Except as provided in this paragraph, the annual obligation to make Minimum Service Payments is not subject to acceleration.

Section 8. **Taxes, Assessments and Liens.** The Owner will pay, when due: (a) all taxes, assessments, and levies of every type or nature levied or assessed against the Property as and when they are due and payable, and (b) any other claim, lien, or encumbrance against the Property prior to or on parity with the lien of this Declaration. The Owner may contest the amount or the payment of any such tax, assessment, levy, claim, lien or encumbrance in good faith by an appropriate proceeding so long as during the pendency of such proceeding the Property is not sold to satisfy such tax, assessment, levy, claim, lien or encumbrance.

For purposes of this Declaration, the term "***Permitted Encumbrances***" means: (x) all legal highways; (y) any covenants, restrictions and easements of record set forth on **EXHIBIT B** hereto; and (z) all zoning and building laws, ordinances, and regulations.

If the Owner fails to pay, when due, any claim, lien, or encumbrance that is prior to or on parity with this Declaration, other than the Permitted Encumbrances, or any tax, assessment, or levy, and if any such failure or condition is not cured (or bond, title insurance, or other security provided to protect the priority of this Declaration) within 30 days after written notice from or on behalf of the City to the Owner (except that no notice or cure period is required if the action is necessary to protect the security of this Declaration), then the City, at its option, may pay the claim, lien, encumbrance, tax, assessment, or levy and any penalty or interest on the same. The Owner must pay to the City within 10 days after written demand, all sums of money advanced by the City under the provisions of this paragraph, together with interest on each advance at the rate of ten (10%) percent per year. All such advances and interest on the same will be added to the next Minimum Service Payment installment due and are secured by this Declaration.

Section 9. **Notices.** Any notice required or permitted to be given to the Owner or the City is deemed given if mailed by certified or registered United States mail, postage prepaid, addressed to the applicable party at its address first set forth above in this Declaration. Each of the Owner and the City may, from time to time, change its notice address by giving written notice to the other party at that party's then current notice address, in accordance with the provisions of this Section.

Section 10. **Duration of Declaration; Termination.** This Declaration is effective on the date that it is executed by all parties hereto. This Declaration terminates as to each Undeveloped Parcel upon the occurrence of the repayment in full of all Bonds and as to each Developed Parcel upon the occurrence of the earlier of (a) the repayment in full of all Bonds or (b) the payment in full of the Minimum Service Payments (as required by Section 3) for each year in respect of which such Developed Parcel was eligible for a CRA Exemption. This Declaration will survive any foreclosures, bankruptcy, or lien enforcement proceedings. Upon the termination of this Declaration as to any Parcel and upon the request of the Owner, the City will execute and deliver to the Owner those documents and instruments as the Owner reasonably requests to evidence the termination.

Section 11. **Reporting Requirements.** During each year that the tax exemption granted pursuant to the TIF Ordinance remains in effect, to the extent the City reasonably requests, each Owner agrees to use reasonable efforts to provide within thirty (30) days following notice from the City, the information regarding the Owner or its Parcels that the City is required to provide in any reports required by the Director of the Ohio Department of Development in accordance with the TIF Statute or that the City must prepare for the tax incentive review council in accordance with ORC Section 5709.85.

Section 12. **Severability.** Any provision of this Declaration that is determined by a court of competent jurisdiction to be prohibited or unenforceable is ineffective only to the extent of the prohibition or unenforceability, without invalidating the remaining provisions.

Section 13. **Estoppel Certificate.** The City covenants that within fifteen days of receiving a written request from any Owner it will deliver to the Owner an estoppel certificate

certifying the status of the obligations secured hereby, in such reasonable detail as the Owner may request.

Section 14. **Interpretation.** Any reference to a section or provision of the Constitution of the State of Ohio, or a section, provision or chapter of the ORC includes the section, provision or chapter as modified, revised, supplemented or superseded from time to time; *provided*, that no amendment, modification, revision, supplement or superseding section, provision or chapter will be applicable solely by reason of this paragraph if it constitutes in any way an impairment of the rights or obligations of any party under this Declaration. No presumption will apply in favor of any party in the interpretation of this Declaration or in the resolution of any ambiguity of any provision hereof. Unless the context indicates otherwise, words importing the singular number include the plural number, and vice versa; the terms “hereof,” “hereby,” “herein,” “hereto,” “hereunder” and similar terms refer to this Declaration; and the term “hereafter” means after, and the term “heretofore” means before, the date of execution and delivery of this Declaration. Words of any gender include the correlative words of the other gender, unless the sense indicates otherwise. References to articles, sections, subsections, clauses, exhibits or appendices in this Declaration, unless otherwise indicated, are references to articles, sections, subsections, clauses, exhibits or appendices of this Declaration.

Section 15. **Governing Law.** This Declaration is made under the laws of the State of Ohio and is for all purposes governed by and construed in accordance with the laws of the State of Ohio. All claims, counterclaims, disputes, and other matters in question among the parties, their respective agents, and employees arising out of or relating to this Declaration or its breach must be filed and decided in a court of competent jurisdiction within Montgomery County, Ohio.

Section 16. **Counterparts; Captions.** This Declaration may be executed in counterpart, and in several counterparts, each of which is an original and all of which constitute one and the same Declaration. Captions have been provided herein for convenience only and do not affect the construction or interpretation of this Declaration.

This Instrument prepared by:
Christopher J. Franzmann
Squire Patton Boggs (US) LLP
2000 Huntington Center
41 South High Street
Columbus, Ohio 43215

EXHIBIT A

Legal Description

EXHIBIT B

Permitted Encumbrances

AI-10688

Topics Of Discussion H.

Council Work Session

Meeting Date: 03/04/2025

Canal Hights TIF

Submitted By: Aaron Sorrell

Department: Assistant City Manager - Public Services

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: None **Legal Review:** In Process

Emergency Legislation?: No **Motion/Ordinance/Resolution No.:**

Agenda Item Description or Legislation Title

Canal Hights TIF

Purpose and Background

The City Council will hold a public hearing at the March 10, 2025 City Council Meeting to allow property owners within the proposed incentive districts for the Canal Heights TIF to comment and/or object to inclusion within the proposed incentive districts. The two affected property owners within the proposed incentive districts were notified of the public hearing as required. No legislative action is required by the City Council at this meeting.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

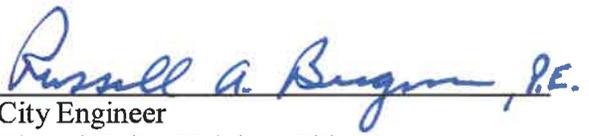
Financial Implications:

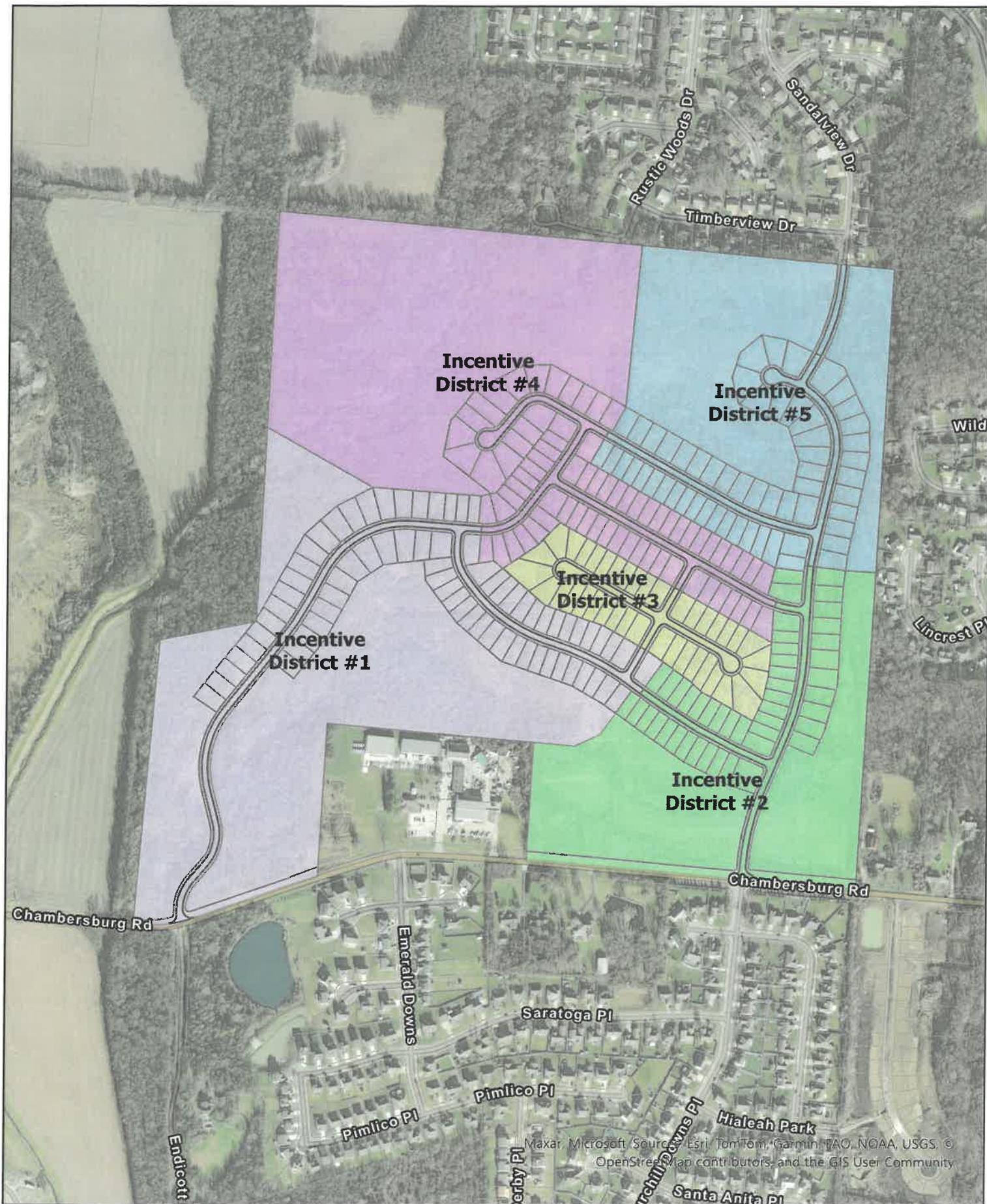
Attachments

Proposed Incentive Districts

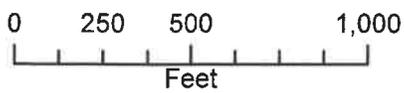
CERTIFICATE OF CITY ENGINEER
PURSUANT TO OHIO REVISED CODE SECTION 5709.40(A)(5)(f)

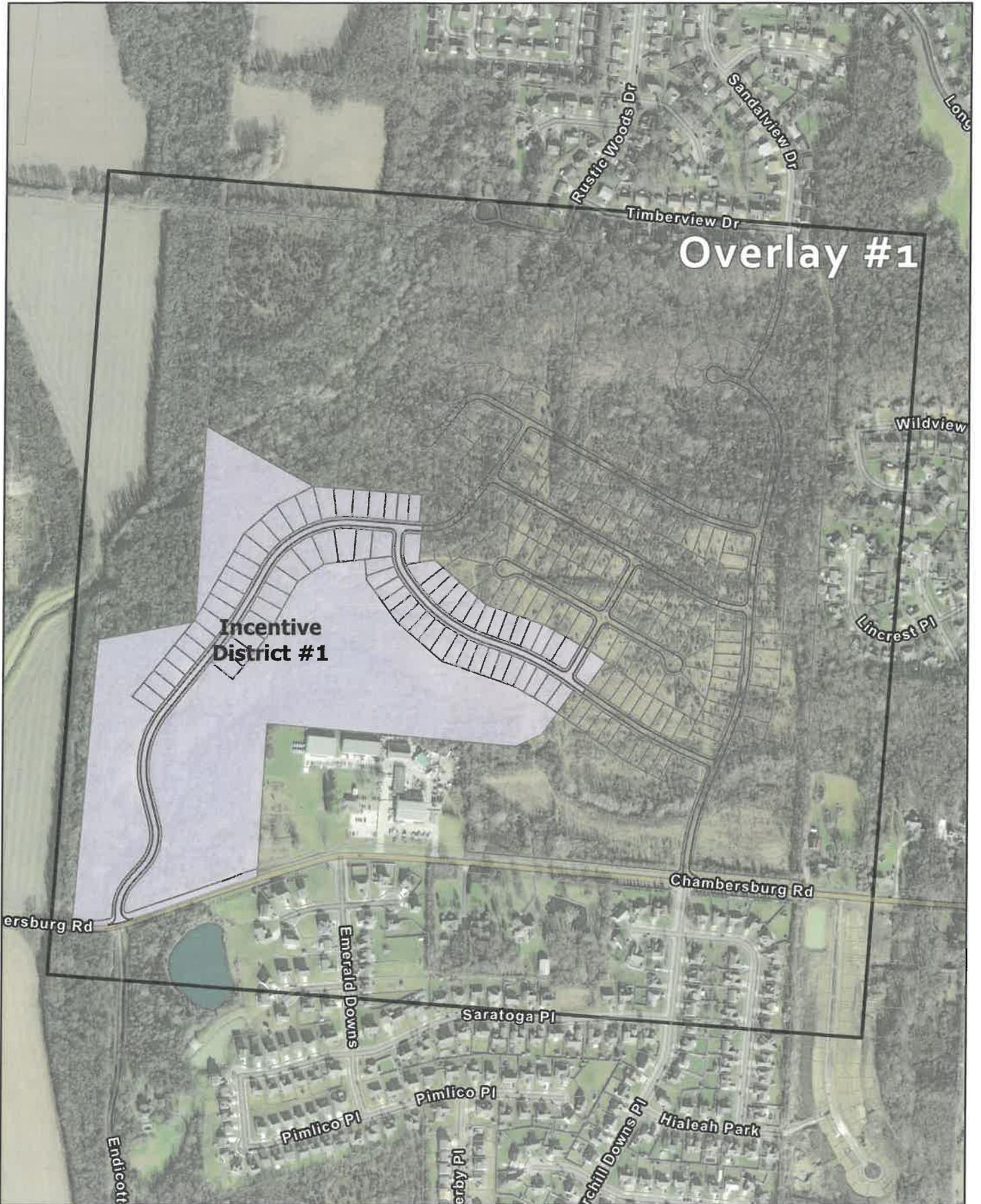
The developer of the incentive districts shown on the attached maps intends to develop a residential subdivision with up to 283 single-family homes within the City in order to increase available housing options within the City. The incentive districts shown on the attached maps are less than 300 acres in size and have a continuous boundary. The Overlays, as defined in Ohio Revised Code Section 5709.40(A)(6) and shown on the attached maps, are less than 300 acres in size and are square or a rectangle having two sides that are not more than twice the length of the smaller sides. Pursuant to Ohio Revised Code Section 5709.40(A)(5)(f), I hereby certify that the public infrastructure serving the incentive districts shown on the attached maps is inadequate to meet the development needs of the districts as evidenced by the development plan for the districts:


City Engineer
City of Huber Heights, Ohio



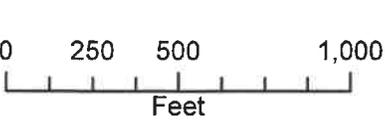
Canal Heights Incentive Districts - Overview





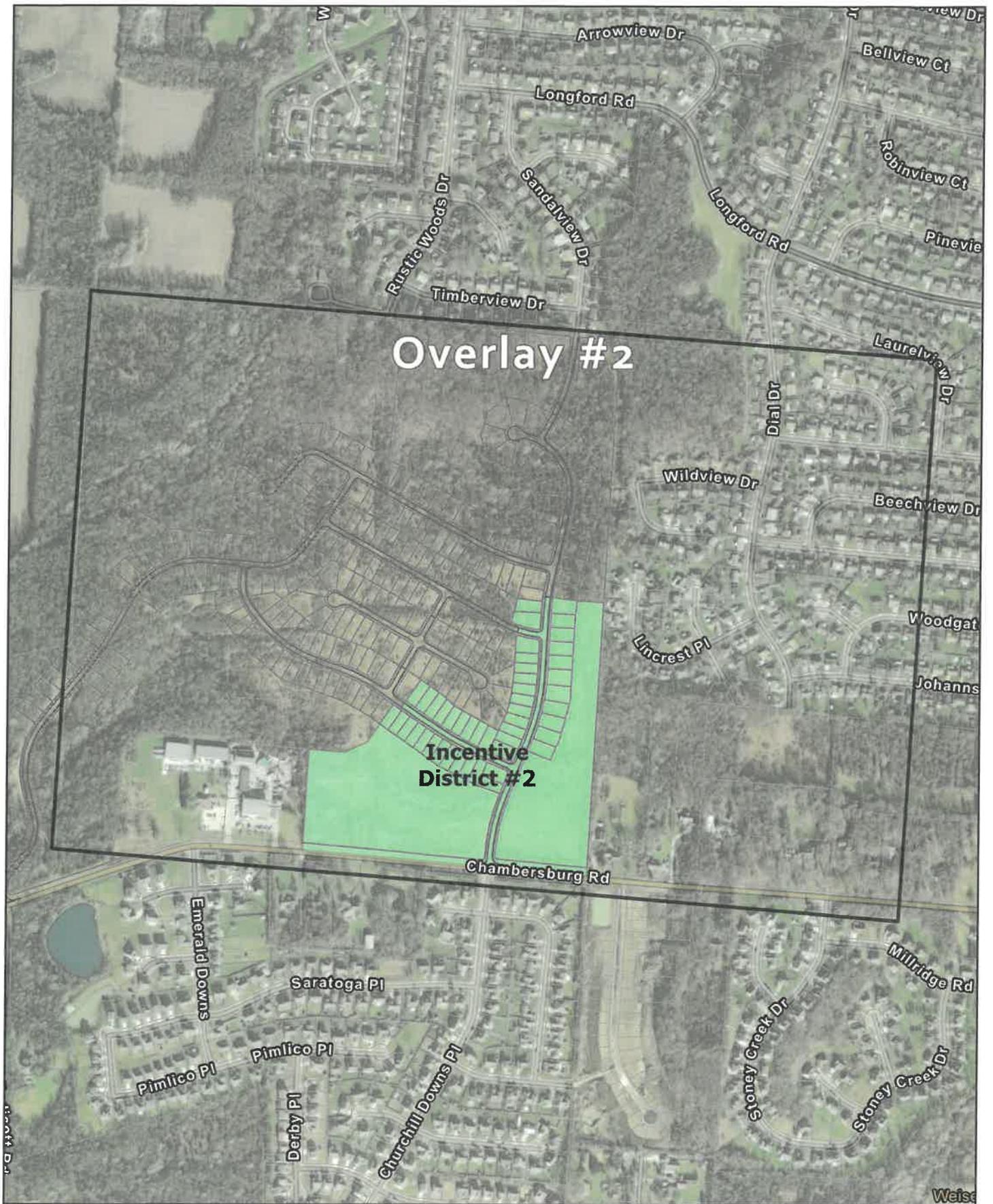
Overlay #1

Incentive District #1



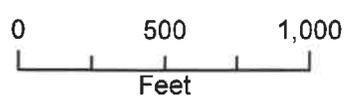
**Canal Heights Incentive Districts
Incentive District #1**





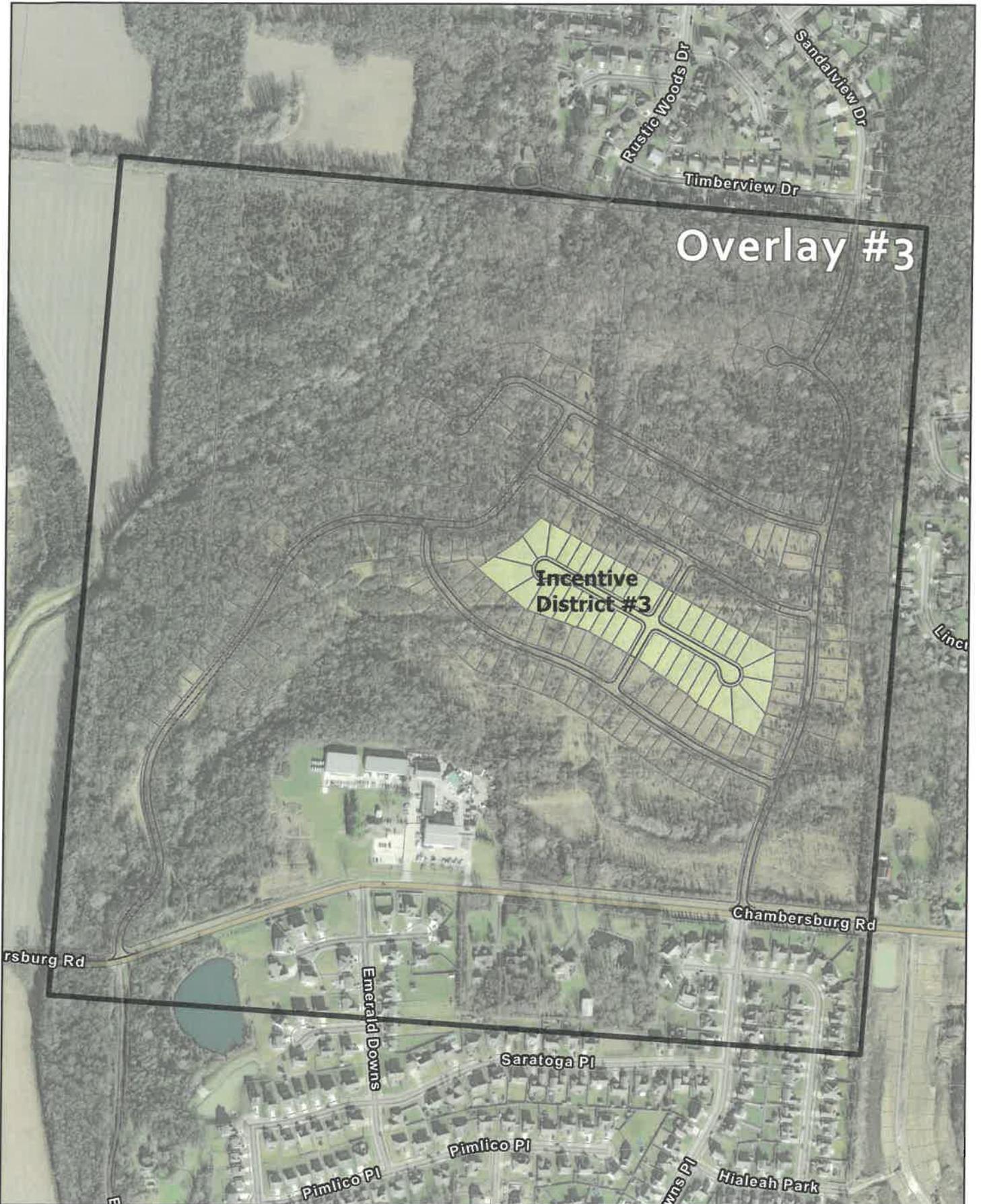
Overlay #2

Incentive District #2



**Canal Heights Incentive Districts
Incentive District #2**

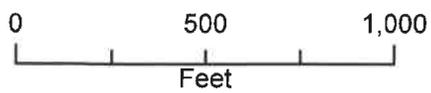


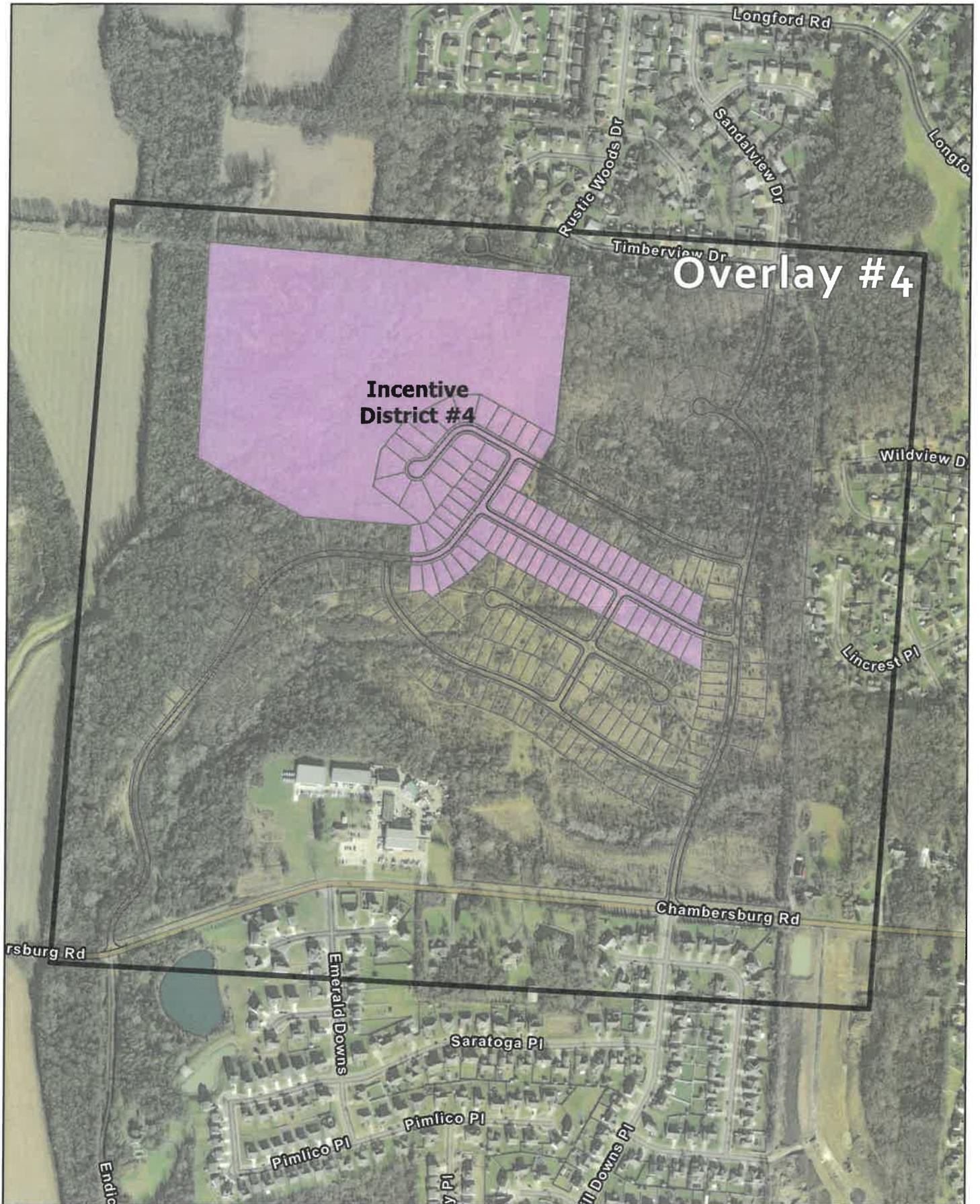


Overlay #3

Incentive District #3

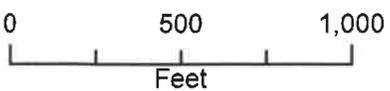
Canal Heights Incentive Districts
Incentive District #3





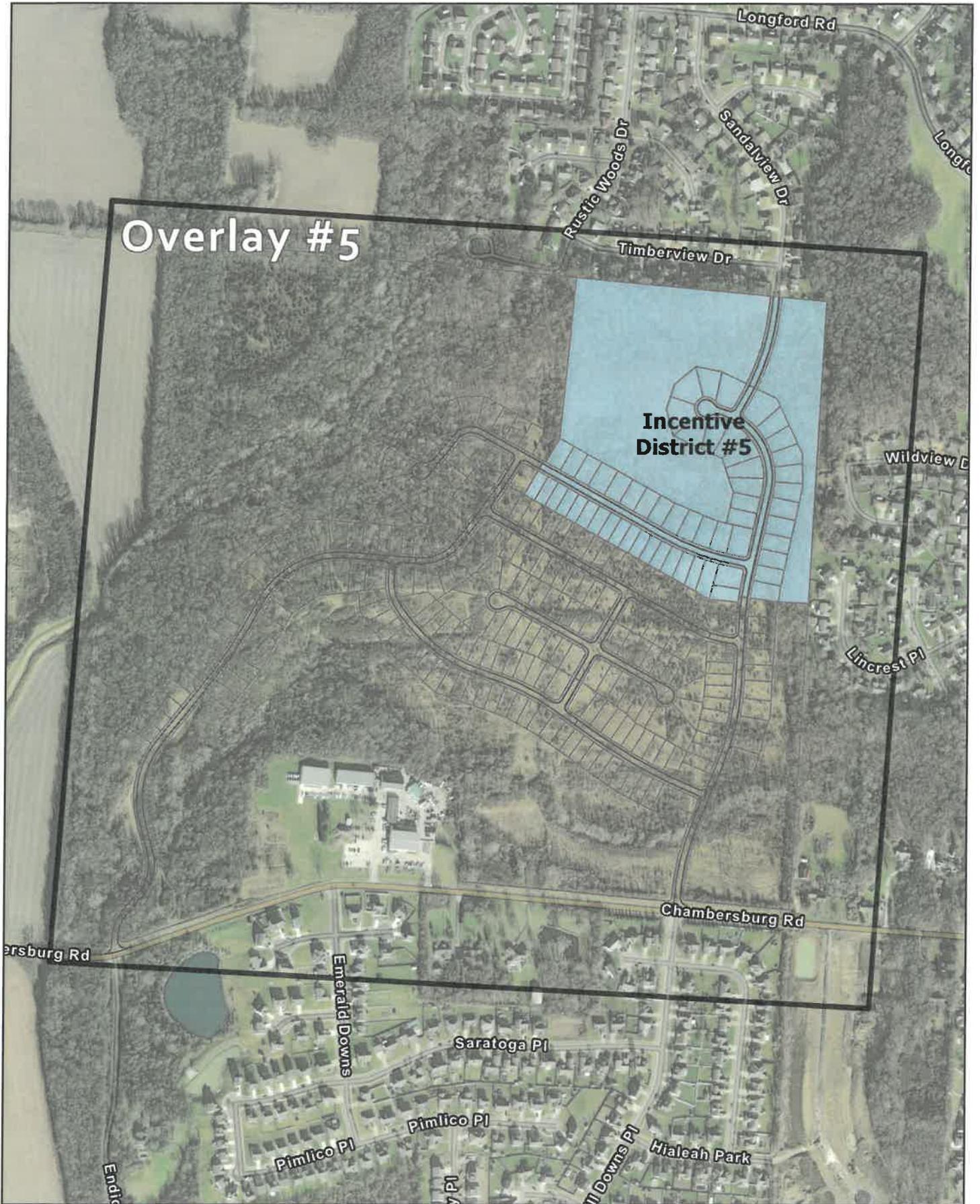
Overlay #4

Incentive District #4



Canal Heights Incentive Districts
Incentive District #4

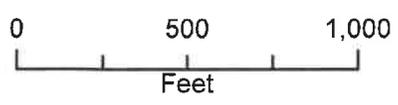




Overlay #5

Incentive District #5

**Canal Heights Incentive Districts
Incentive District #5**



AI-10701

Topics Of Discussion I.

Council Work Session

Meeting Date: 03/04/2025

Kroger Aquatic Center Naming Rights

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: None **Legal Review:** In Process

Emergency Legislation?: No **Motion/Ordinance/Resolution No.:**

Agenda Item Description or Legislation Title

Kroger Aquatic Center Naming Rights

Purpose and Background

This agenda item is to discuss an updated agreement between the City and Kroger for the naming rights for the Kroger Aquatic Center.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

No file(s) attached.

AI-10700

Topics Of Discussion J.

Council Work Session

Meeting Date: 03/04/2025
Huber Heights Community Improvement Plan (CIC)

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: None **Legal Review:** Completed

Emergency Legislation?: No **Motion/Ordinance/Resolution No.:**

Agenda Item Description or Legislation Title

Huber Heights Community Improvement Plan (CIC)

Purpose and Background

The Law Director has recommended that Council appoint new members to the Huber Heights Community Improvement Corporation (CIC). The CIC is active and is current with all legally required filings in place. However, given City Staff and Council turnover, the City representatives on the CIC must be formally appointed by Council by a resolution. The CIC Code Of Regulations requires that at least three City representatives be appointed to the CIC Board. Historically, those representatives have been the City Manager, the Finance Director, and the Economic Development Director. In addition, the City has appointed a non-voting City Staff member to the CIC as the Executive Director. In this case, the Law Director recommends that Council appoint John Russell, Jim Bell, and Jason Antonick as voting members of the CIC Board and Alex Zaharieff as the CIC Executive Director. The current CIC Code Of Regulations also allows the appointment of a minimum of three (3) CIC Board Members and up to a maximum of ten (10) CIC Board Members. For this reason, the Law Director further recommends that the Mayor and one other Councilmember be appointed to the CIC Board. There are currently two citizen CIC Board Members who are still active on the CIC Board, Pam Whited and Gary Swords.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

No file(s) attached.

AI-10690

Topics Of Discussion K.

Council Work Session

Meeting Date: 03/04/2025

Economic Development Director - Appointment

Submitted By: Katie Knisley

Department: City Manager

Council Committee Review?: Council Work Session

Division: Human Resources

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Economic Development Director - Appointment

Purpose and Background

This legislation approves the appointment of Jason Antonick as the Economic Development Director for the City of Huber Heights.

Fiscal Impact

Source of Funds: Economic Development Budget

Cost: \$90,431

Recurring Cost? (Yes/No): Yes

Funds Available in Current Budget? (Yes/No): Yes

Financial Implications:

Attachments

Resolution

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

AUTHORIZING THE CITY MANAGER TO APPOINT JASON ANTONICK AS ECONOMIC DEVELOPMENT DIRECTOR.

WHEREAS, Section 7.03 of the Charter of the City of Huber Heights, Ohio, requires that the City Manager may appoint the head of each department, subject to the approval of the City Council; and

WHEREAS, the City Manager desires to appoint Jason Antonick to the position of Economic Development Director, with Council's approval, effective February 24, 2025; and

WHEREAS, the City Manager appoints Jason Antonick at a salary within the limits described in Resolution No. 2025-R-7509; and with certain benefits, as agreed upon between the City Manager and Jason Antonick within the limits of benefits offered to all employees of the City of Huber Heights.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The City Manager is hereby authorized to appoint Jason Antonick as Economic Development Director effective February 24, 2025.

Section 2. The City Manager is hereby authorized to offer Jason Antonick, salary and benefits consistent with existing Resolution No. 2025-R-7509 and within the limits of benefits and pay offered to all City employees.

Section 3. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 4. That this Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
____ Yeas; ____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

AI-10692

Topics Of Discussion L.

Council Work Session

Meeting Date: 03/04/2025

WPAFB Compatibility Use Plan (CUP)

Submitted By: Rachael Dillahunt

Department: City Manager

Council Committee Review?: Council Work Session

Division: City Manager

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

WPAFB Compatibility Use Plan (CUP)

Purpose and Background

The Wright-Patterson Air Force Base (AFB) Compatibility Use Plan (CUP) is an update to the 1996 Wright-Patterson AFB Joint Land Use Study (JLUS) and the result of a collaborative planning effort by the Wright-Patterson AFB Regional Council Of Governments and Dayton Development Coalition, in collaboration with counties, townships, and municipalities; Wright-Patterson AFB; regional, state, and federal agencies; and other interested and affected stakeholders. The CUP was sponsored by the U.S. Department of Defense Office of Local Defense Community Cooperation with the primary goal of studying land use compatibility and developing strategies designed to safeguard the quality of life of community residents, the growth and economic development of the communities, and missions of Wright-Patterson AFB. The CUP contains recommendations for the implementation of strategies, policies, and actions intended to promote collaborative and compatible land use planning, minimize the impact of military operations on nearby communities, increase public awareness of military operations and other activities at Wright-Patterson AFB, and to prevent incompatible land uses and other community impacts to the Wright-Patterson AFB missions. The CUP Steering Committee guided and oversaw the CUP process and development of the CUP, met to review and provide input on the CUP, and supported public meetings, providing an opportunity for the public to participate in the process and provide comments on the draft CUP. The CUP Steering Committee reviewed and accepted the final CUP report.

The City of Huber Heights successfully secured the East Chambersburg Road Realignment Project in the Capital Improvements Program (CIP), ensuring funding and prioritization for this critical infrastructure upgrade. This project will realign New Carlisle Pike, connecting it with East Chambersburg Road near State Route 4 and State Route 235, providing an alternative route to alleviate congestion and enhance traffic flow. The improved roadway will create new commercial development opportunities near Wright-Patterson AFB, supporting economic growth while strengthening regional transportation. With this investment, Huber Heights is reinforcing its commitment to infrastructure and economic development that supports mission readiness and operational continuity. It is important to have this project listed in the plan and agreed upon by Wright-Patterson AFB and the Council Of Governments (COG) members, as this designation recognizes it as a regional priority. This recognition will also help secure grant funding for the project, ensuring the necessary resources are in place to support its successful completion.

Fiscal Impact

Source of Funds: N/A
Cost: N/A
Recurring Cost? (Yes/No): N/A
Funds Available in Current Budget? (Yes/No): N/A
Financial Implications:

Attachments

CUP Summary
CUP
Resolution

Wright-Patterson AFB Compatibility Use Plan (CUP)

February 4, 2025

Prepared for Wright-Patterson Regional Council of Governments
Funded by the Office of Local Defense Community Cooperation (OLDCC),
Department of Defense

Membership

- **City of Huber Heights**
- **City of Beavercreek**
- **City of Dayton**
- **City of Fairborn**
- **City of Riverside**
- **Bath Township**
- **Associate Membership**
 - **WPAFB 88th ABW/SI**
 - **Dayton Development Coalition**
 - **Miami Conservancy District**
 - **Miami Valley Regional Planning Commission**
 - **Wright State University**
 - **Greene County**
 - **Montgomery County**

Wright-Patterson AFB Compatibility Use Plan (CUP)

Purpose of the CUP

- **Protect Military Operations – Minimize encroachments and ensure mission sustainability**
- **Support Regional Growth – Guide land use planning and economic development**
- **Enhance Collaboration – Strengthen partnerships between WPAFB, local governments, and stakeholders**
- **Improve Safety & Quality of Life – Address noise, infrastructure, and environmental concerns**

Wright-Patterson AFB Compatibility Use Plan (CUP)

Key Compatibility Focus Areas

- **Land Use Compatibility – Prevent incompatible development near WPAFB**
- **Transportation & Infrastructure – Improve roadways, utilities, and emergency response**
- **Environmental & Safety Considerations – Mitigate noise, airspace, and accident potential risks**
- **Economic Development – Leverage WPAFB's economic impact for regional growth**
- **Community Engagement – Ongoing**

Wright-Patterson AFB Compatibility Use Plan (CUP)

Plan	Issue #	Issue Description	Strategy#	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1A	Identify a point of contact and create a pamphlet with WPAFB positions and contact information that agencies, developers, jurisdictions, organizations, residents, and WSU can utilize to contact WPAFB.	WPAFB	WPAFB Tenant Units	Short	High	7-06
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1C	Develop and maintain mutual aid agreements.	WPAFB Partnership Committee	WPCOG, Other as needed	Mid	High	7-08
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1D	Enhance public engagement activities.	WPAFB	WPAFB Partnership Committee, WPAFB PAO, Other as needed	Short	High	7-09
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2D	Establish a WPCOG technical subcommittee to the Airport Zoning Board.	WPCOG	Other as needed	Short	High	7-14
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4A	Establish a CUP Implementation Phase Committee.	WPCOG	WPAFB, Clark County, Green County, Montgomery County, Miami County, Dayton Development Coalition, Miami Conservancy District, and Others as needed	Short	High	7-18
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4B	Develop a charter.	WPCOG	WPAFB, Clark County, Green County, Montgomery County, Miami County, Dayton Development Coalition, Miami Conservancy District, and Others as needed	Short	High	7-19
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4C	Identify funding for implementing the CUP strategies.	WPAFB Implementation Phase Committee	Other as needed	Short	High	7-20
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4D	Develop and fortify WPCOG revenue streams.	WPCOG	Other as needed	Short	High	7-21
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4E	Create a sharing portal.	WPAFB Partnership Committee	Other as needed	Short	High	7-22
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5B	Create an Airport Zoning Regulations brochure.	WPCOG	Other as needed	Short	High	7-24
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5C	Locally adopt the Airport Zoning Regulations.	Local jurisdictions	Other as needed	Short	High	7-24
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5D	Incorporate the Airport Zoning Regulations into plans and GIS portals.	WPCOG	Other as needed	Short	High	7-25
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5E	Update the existing WPAFB Airport Zoning Regulations.	WPCOG	Other as needed	Short	High	7-25
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2C	Adopt UAS ordinances.	Project Area jurisdictions	WPAFB, FAA, Other as needed	Short	High	7-42
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2D	Create a UAS operational procedures brochure.	WPAFB Partnership Committee	Other as needed	Short	High	7-43
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1A	Consult with flood protection and watershed experts	Miami Conservancy District	WPCOG, WPAFB, Other as needed	Short	High	7-45
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1B	Appoint or hire a dedicated grant writer(s).	WPCOG	Miami Conservancy District, Other as needed	Short	High	7-46
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1C	Consult with preservation organizations.	Miami Conservancy District	Other as needed	Short	High	7-46
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1D	Explore funding options.	WPCOG	Other as needed	Short	High	7-47
Water Quality/Quantity	WQQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQQ-2A	Prevent further groundwater contamination.	WPAFB	Environmental Protection Agency, Other as needed	Ongoing	High	7-49
Water Quality/Quantity	WQQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQQ-2B	Enhance communication protocols.	WPAFB	WPAFB Partnership Committee, News and social media outlets	Ongoing	High	7-50
Water Quality/Quantity	WQQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQQ-2D	Enhance outreach efforts.	WPAFB	Other as needed	Ongoing	High	7-52

Plan	Issue#	Issue Description	Strategy#	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Land Use	LU-5	Utility pole lines run along the northern portion of the airfield, and trees obstruct the imaginary surfaces	LU-5A	Bury utility lines underground.	WPAFB	WPAFB Partnership Committee, Other as needed	Mid	High	7-69
Land Use	LU-5	Utility pole lines run along the northern portion of the airfield, and trees obstruct the imaginary surfaces	LU-5B	Implement a comprehensive strategy to address tree obstructions near WPAFB's imaginary surfaces.	WPAFB	WPAFB Partnership Committee, Other as needed	Mid	High	7-70
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1D	Create a best practice pamphlet with sound reduction strategies.	WPAFB partner communities	Other as needed	Short	High	7-73
Cultural Resources	CR-1	There is a potential for enhanced public awareness of Air Force-related cultural resources.	CR-1A	Enhance the relationship with the Dayton Area Chamber of Commerce.	WPAFB	Local jurisdictions, regional jurisdictions, News and social media outlets	Ongoing	Low	7-31
Cultural Resources	CR-1	There is a potential for enhanced public awareness of Air Force-related cultural resources.	CR-1B	Enhance the relationship with the National Museum of the U.S. Air Force	WPAFB Partnership Committee	Other as needed	Ongoing	Low	7-32
Cultural Resources	CR-1	There is a potential for enhanced public awareness of Air Force-related cultural resources.	CR-1C	Commission public art and sculptures.	WPAFB Partnership Committee	Other as needed	Mid	Low	7-33
Land/Airspace Competition	LAS-1	The growth of aviation at Dayton International Airport creates airspace competition.	LAS-1A	Develop a Memorandum of Understanding.	WPAFB	Federal Aviation Administration, Joby International, Dayton International Airport	Short	Low	7-40
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1E	Pursue partnerships.	WPCOG	Other as needed	Short	Low	7-47
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1B	Establish/transition to the WPAFB Partnership Committee.	WPCOG	WPAFB, Clark County, Green County, Montgomery County, Miami County, Dayton Development Coalition, Miami Conservancy District, and Others as needed	Mid	Medium	7-07
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1E	Establish a recurring agenda item for compatibility at WPCOG meetings.	WPCOG	WPAFB, Other as needed	Short	Medium	7-10
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2A	Develop a courtesy review process with regional planning staff.	WPAFB	Local jurisdictional planning staff	Short	Medium	7-11
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2B	Collaborate and enhance awareness of compatible land use planning	WPAFB	WPAFB Airport Zoning Board, WPCOG	Short	Medium	7-12
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2C	Develop a notification regional web portal	WPCOG	WPAFB Airport Zoning Board	Short	Medium	7-13
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3A	Develop an aircraft noise fact sheet.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-15
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3B	Establish a dedicated web page for aircraft noise	WPAFB Partnership Committee	Other as needed	Short	Medium	7-16
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3C	Develop a PFAS fact sheet.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-17
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3C	Create a public advisory board for the WPAFB CUP.	WPAFB Partnership Committee	Local citizens	Short	Medium	7-17
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5A	Develop a public education campaign for Airport Zoning Regulations.	WPCOG	Other as needed	Short	Medium	7-23
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5F	Partner with media outlets.	WPCOG	Other as needed	Short	Medium	7-26
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5G	Enhance community engagement procedures.	WPCOG	Other as needed	Short	Medium	7-27
Communication and Coordination	COM-6	There is a lack of inclusivity on the WPAFB Airport Zoning Board.	COM-6A	Expand Board membership to include townships, cities, and villages.	WPAFB Airport Zoning Board	Other as needed	Short	Medium	7-28
Communication and Coordination	COM-6	There is a lack of inclusivity on the WPAFB Airport Zoning Board.	COM-6B	Formalize the review process.	WPAFB Airport Zoning Board	Other as needed	Short	Medium	7-29
Resiliency	RES-1	Climate change is an evolving threat.	RES-1A	Monitor and collaborate to adapt to climate change in the region around WPAFB.	WPAFB partner communities	Other as needed	Short	Medium	7-34

Plan	Issue #	Issue Description	Strategy #	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Resiliency	RES-1	Climate change is an evolving threat.	RES-2A	Identify Opportunities for Shared Energy Resiliency	WPAFB partner communities	AES Ohio, WPAFB, Local jurisdictions, regional jurisdictions	Long	Medium	7-35
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1A	Enact legislation to support conservation efforts.	WPAFB partner communities	Other as needed	Short	Medium	7-36
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1B	Identify partners to protect natural ecosystems.	WPAFB partner communities	Conservation agencies, WPAFB, Other as needed	Short	Medium	7-37
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1C	Participate in the Sentinel Landscapes Partnership.	WPAFB partner communities	Other as needed	Mid	Medium	7-38
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1D	Promote sustainable development.	WPAFB partner communities	Other as needed	Short	Medium	7-38
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1E	Develop a regional wildlife management plan.	WPAFB partner communities	Other as needed	Mid	Medium	7-39
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1F	Enhance community restoration efforts.	WPAFB partner communities	Other as needed	Short	Medium	7-39
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2A	Enhance awareness of federal UAS or drone regulations.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-41
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2B	Partner to enhance resources for enforcing FAA regulations.	WPAFB Partnership Committee	FAA	Mid	Medium	7-42
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2E	Promote UAS/drone use education through apps and websites	WPAFB Partnership Committee	Other as needed	Short	Medium	7-43
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2F	Create a website to upload and document UAS sightings.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-44
Water Quality/Quantity	WQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQ-1F	Develop a preservation plan.	Miami Conservancy District	WPAFB Partnership Committee, Other as needed	Mid	Medium	7-48
Water Quality/Quantity	WQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQ-2C	Advocate for legislation to protect water sources.	State House and Senate elected officials	Other as needed	Short	Medium	7-51
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1A	Advocate for the creation of state legislation.	State House and Senate elected officials	WPCOG, Other as needed	Short	Medium	7-53
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1B	Establish, advertise, and enforce no-fly zones for recreational UAS users.	WPAFB Partnership Committee	News and social media outlets, Other as needed	Short	Medium	7-54
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1C	Implement best practices.	WPAFB	USAF, Other federal and public agencies as needed	Short	Medium	7-54
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1D	Establish a UAS working group.	State House and Senate elected officials	Other as needed	Short	Medium	7-55
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1E	Develop a UAS plan.	WPAFB	FAA, WPAFB Partnership Committee UAS/drone working group, Other as needed	Mid	Medium	7-56
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1A	Adopt the 2022 AICUZ Study noise contours.	WPCOG, Clark, Greene, Montgomery Counties	Other as needed	Short	Medium	7-57
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1B	Adopt the aircraft noise land use compatibility guidelines.	WPCOG, Clark, Greene, Montgomery Counties	Other as needed	Short	Medium	7-58
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1C	Create a future land use plan.	WPCOG, Clark, Greene, Montgomery Counties	Other as needed	Mid	Medium	7-58
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1D	Establish a process checklist.	WPAFB partner communities	Other as needed	Short	Medium	7-59
Land Use	LU-2	There is a lack of airfield safety zone regulations in local zoning codes.	LU-2A	Formally adopt the safety zone compatibility guidelines per APZs.	Clark County, Greene County	Other as needed	Short	Medium	7-61
Land Use	LU-2	There is a lack of airfield safety zone regulations in local zoning codes.	LU-2B	Formally adopt the safety zone compatibility guidelines.	Montgomery County, Dayton	Other as needed	Short	Medium	7-62
Land Use	LU-2	There is a lack of airfield safety zone regulations in local zoning codes.	LU-2C	Socialize the need for compatibility zones.	WPAFB	WPAFB Partnership Committee, Other as needed	Ongoing	Medium	7-62

Plan	Issue #	Issue Description	Strategy #	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Land Use	LU-3	The 1997 Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones and imaginary surfaces.	LU-3A	Update regulations to use the current compatibility guidelines.	Clark County, Greene County, Miami County, Montgomery County	Other as needed	Short	Medium	7-63
Land Use	LU-3	The 1997 Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones and imaginary surfaces.	LU-3B	Update the Airport Zoning Regulations.		WPCOG, Other as needed	Mid	Medium	7-64
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4A	Develop a 3D GIS model.	WPAFB Partnership Committee	Other as needed	Mid	Medium	7-65
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4B	Create a height hazard calculator.		Other as needed	Mid	Medium	7-66
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4C	Create a crane mapping tool.		FAA, Other as needed	Mid	Medium	7-66
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4D	Amend local codes.		Other as needed	Long	Medium	7-67
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4E	Enhance awareness of Part 77.	WPAFB	WPAFB Partnership Committee, Other as needed	Ongoing	Medium	7-67
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1A	Establish a zoning overlay district.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-71
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1B	Require noise disclosure forms.	WPAFB partner communities	Chamber of Commerce, Realtor associations, Other as needed	Ongoing	Medium	7-72
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1C	Enforce regulations.	WPAFB partner communities	Other as needed	Ongoing	Medium	7-72
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1E	Implement a public education campaign.	WPAFB	WPAFB Partnership Committee, Other as needed	Ongoing	Medium	7-73
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1F	Create a noise awareness buffer.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-74
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1A	Conduct a public outreach campaign.	WPAFB Partnership Committee	WPAFB, Other as needed	Short	Medium	7-75
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1B	Conduct a Traffic Impact Analysis study.	WPAFB Partnership Committee	Other as needed	Mid	Medium	7-76
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1C	Seek federal funding.	WPCOG	Other as needed	Mid	Medium	7-76
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1D	Implement transportation demand management principles.	WPCOG	Montgomery County, Other as needed	Ongoing	Medium	7-77
Safety	SA-1	There is incompatible development inside the APZs.	SA-1A	Adopt land use compatibility guidelines.	Dayton, Fairborn	WPAFB, Other as needed	Short	Medium	7-78
Safety	SA-1	There is incompatible development inside the APZs.	SA-1B	Use conditional-use permits.	Clark County	WPAFB, Other as needed	Short	Medium	7-78
Safety	SA-1	There is incompatible development inside the APZs.	SA-1C	Consider land easements.	WPAFB Partnership Committee	Other as needed	Mid	Medium	7-79
Safety	SA-1	There is incompatible development inside the APZs.	SA-1D	Enter into development agreements	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-79
Safety	SA-1	There is incompatible development inside the APZs.	SA-1E	Create a buffer around the safety zones.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-80
Safety	SA-2	Bird and wildlife attractants exist near runway.	SA-2A	Develop and distribute BASH educational materials.	WPAFB Partnership Committee	WPAFB, Other as needed	Short	Medium	7-80
Safety	SA-2	Bird and wildlife attractants exist near runway.	SA-2B	Implement BASH prevention techniques.	WPAFB Partnership Committee	WPAFB, Other as needed	Ongoing	Medium	7-81
Dust/Smoke/Steam	DSS-1	Dust/Smoke/Steam could limit operational capabilities at WPAFB.	DSS-1A	Develop and implement a strategy to deal with high amounts of dust in the air.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Miami Conservancy District, Other as needed	Short	Medium	7-82

Questions?



Wright-Patterson AFB Compatibility Use Plan





This plan was prepared under contract with the Wright-Patterson Regional Council of Governments, with financial support from the Office of Local Defense Community Cooperation (OLDCC), Department of Defense. The content reflects the views of the key CUP partners involved in the development of the plan and does not necessarily reflect the views of the OLDCC.





Compatibility Use Plan

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WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

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Acronyms

A

ADIZ	AIR DEFENSE IDENTIFICATION ZONE
AFB	AIR FORCE BASE
AFI	AIR FORCE INSTRUCTION
AFICC	AIR FORCE INSTALLATION CONTRACTING CENTER
AFIT	AIR FORCE INSTITUTE OF TECHNOLOGY
AFLCMC	AIR FORCE LIFE CYCLE MANAGEMENT CENTER
AFM	AIR FORCE MANUAL
AFMC	AIR FORCE MATERIAL COMMAND
AFRC	AIR FORCE RESERVE COMMAND
AFRL	AIR FORCE RESEARCH LABORATORY
AGL	ABOVE GROUND LEVEL
AICUZ	AIR INSTALLATIONS COMPATIBLE USE ZONES
AMC	AIR MATERIAL COMMAND
ANG	AIR NATIONAL GUARD
APZ	ACCIDENT POTENTIAL ZONE
AT/FP	ANTI-TERRORISM/ FORCE PROTECTION
ATC	AIR TRAFFIC CONTROL
AQ	AIR QUALITY

B

BASH	BIRD/WILDLIFE AIRCRAFT STRIKE HAZARD
BIO	BIOLOGICAL RESOURCES
BLM	BUREAU OF LAND MANAGEMENT

C

CAA	CLEAN AIR ACT
CERCLA	COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT
CFA	CONTROLLED FIRING AREA
CFC	COMBINED FEDERAL CAMPAIGN
CFR	CODE OF FEDERAL REGULATIONS
COM	COMMUNICATION/ COORDINATION
CR	CULTURAL RESOURCES
CUP	COMPATIBILITY USE PLAN
CWA	CLEAN WATER ACT
CZ	CLEAR ZONE



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

D

DAY	DAYTON INTERNATIONAL AIRPORT
DB	DECIBEL
DBA	A-WEIGHTED DECIBEL
DNL	DAY-NIGHT AVERAGE SOUND LEVEL
DOD	DEPARTMENT OF DEFENSE
DODI	DEPARTMENT OF DEFENSE INSTRUCTION
DOE	DEPARTMENT OF ENERGY
DSS	DUST/SMOKE/STEAM
DVFR	DEFENSE VISUAL FLIGHT RULES

E

ED	ENERGY DEVELOPMENT
EERE	OFFICE OF ENERGY AND RENEWABLE ENERGY
EPA	ENVIRONMENTAL PROTECTION AGENCY

F

FAA	FEDERAL AVIATION ADMINISTRATION
FCC	FEDERAL COMMUNICATIONS COMMISSION
FLPMA	FEDERAL LAND POLICY AND MANAGEMENT ACT
FLUM	FUTURE LAND USE MAP
FP	FORCE PROTECTION
FPCON	FORCE PROTECTION CONDITION
FSC	FREQUENCY SPECTRUM CAPACITY
FSI	FREQUENCY SPECTRUM IMPEDANCE/INTERFERENCE

H

HA	HOUSING AVAILABILITY
HMA	HOUSING MARKET AREA
HPW	HUMAN PERFORMANCE WING
HUD	HOUSING AND URBAN DEVELOPMENT

I

IE	INFRASTRUCTURE EXTENSIONS
IFR	INSTRUMENT FLIGHT RULES
INRMP	INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN
ISR	INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE

L

LAANC	LOW ALTITUDE AUTHORIZATION AND NOTIFICATION CAPABILITY
LAA	LOCAL AIRPORT ADVISORY
LAS	LAND/AIRSPACE COMPETITION
LEG	LEGISLATIVE INITIATIVES
LG	LIGHT AND GLARE
LU	LAND USE

M

MOA	MILITARY OPERATING AREA
MSA	METROPOLITAN STATISTICAL AREA
MTR	MILITARY TRAINING ROUTE
MVRPC	MIAMI VALLEY REGIONAL PLANNING COMMISSION

N

NAAQS	NATIONAL AMBIENT AIR QUALITY STANDARDS
NEPA	NATIONAL ENVIRONMENTAL POLICY ACT
NHPA	NATIONAL HISTORIC PRESERVATION ACT
NMFS	NATIONAL MARINE FISHERIES SERVICE
NOI	NOISE
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NSA	NATIONAL SECURITY AREA

O

OE/AAA	OBSTRUCTION EVALUATION/AIRPORT AIRSPACE ANALYSIS
OLDCC	OFFICE OF LOCAL DEFENSE COMMUNITY COOPERATION
OSD	OFFICE OF THE SECRETARY OF DEFENSE

P

PC	POLICY COMMITTEE
PS	PUBLIC SERVICES
PT	PUBLIC TRESPASSING

R

RC	ROADWAY CAPACITY
RE	RESILIENCY
REPI	READINESS AND ENVIRONMENTAL PROTECTION INTEGRATION

S

SA	SAFETY
SDWA	SAFE DRINKING WATER ACT
SNR	SCARCE NATURAL RESOURCES
STEM	SCIENCE, TECHNOLOGY, ENGINEERING, MATH
SUA	SPECIAL USE AIRSPACE



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

T

T&E	THREATENED AND ENDANGERED
TC	TECHNICAL COMMITTEE
TFR	TEMPORARY FLIGHT RESTRICTION
TRSA	TERMINAL RADAR SERVICE AREA

U

UAS	UNMANNED AERIAL SYSTEM
UFC	UNITED FACILITIES CRITERIA
US	UNITED STATES
USAHAS	UNITED STATES AVIAN HAZARD ADVISORY SYSTEM
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

V

V	VIBRATION
VFR	VISUAL FLIGHT RULES
VO	VERTICAL OBSTRUCTION

W

WPAFB	WRIGHT-PATTERSON AIR FORCE BASE
WQQ	WATER QUALITY/QUANTITY

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1

Introduction

Military installations generate thousands of jobs and billions of dollars in regional economic impact nationwide. The sustainment of these military installations and associated missions and facilities underpin the vitality of local communities, economies, and industries.

Ensuring compatibility between military bases and surrounding communities through partnership promotes military mission sustainment and continued presence in the local economy.

The WPAFB CUP proactively identifies existing and potential compatibility findings, provides solutions to protect military capabilities, and promotes compatible economic growth through strengthening coordination efforts between the installation and neighboring communities.



1.1 Why a Compatibility Use Plan?

Existing levels and types of encroachment (how an installation impacts a community and vice versa) are key factors evaluated by the Department of Defense (DoD) and other federal agencies when considering the strategic stationing of future missions or the realignment of military assets from one installation to another.

To protect the missions of military facilities, the health of regional economies, and industries reliant upon those facilities and economies, encroachment must be addressed through mutual information sharing, collaborative effort, and joint planning among installations and local communities. To this end, the DoD OLDCC maintains the Installation Resilience program. The program supports and funds defense communities nationwide to identify and assess encroachment concerns around military installations and develop strategies and tools to address these concerns. Tools such as enhanced communication processes, strategic partnerships, and local policies and ordinance updates can facilitate regional compatibility with a continued military presence. Once the WPAFB CUP is completed, the communities, installation, and other partners can work together to implement the strategies found **within the Implementation Plan** of this CUP to promote mission sustainability and the military readiness of WPAFB.

The WPAFB CUP is a community-led project funded through the OLDCC. It is a collaborative effort between the community, state and federal agencies, and other interested stakeholders to develop appropriate actions to address compatibility and shared resources in the region. The CUP is a collection of information designed to help make more informed decisions and provides tailored recommendations for each stakeholder. These recommendations, or strategies, are developed to mitigate and prevent future incompatibilities while strengthening the coordination between WPAFB and the neighboring communities impacted by or that impact the base.

The CUP provides a set of recommended strategies for local jurisdictions, agencies, and organizations in the CUP Project Area to guide future compatibility efforts. However, the CUP itself is not an adopted plan. Acceptance of the Plan by its development partners will confirm collective support for the identified implementation efforts. For instance, local jurisdictions may use the recommended strategies to guide future amendments to general plans and zoning ordinances and assist in reviewing development proposals in the CUP Project Area. WPAFB can use the CUP to guide its interaction with local jurisdictions on future projects and to manage internal planning processes with a compatibility-based approach.

Compatibility, in relation to military readiness, can be defined as the balance or compromise between community needs and interests and military needs and interests.

1.2 What is the Wright-Patterson AFB Compatibility Use Plan

The WPAFB CUP is a planning tool developed through the collaborative efforts of local, regional, and state stakeholders to encourage compatible growth in Clark, Greene, Miami, and Montgomery Counties around the installation. The WPAFB CUP also seeks to mitigate existing and future land use conflicts and resource competition between the installation and its surrounding communities. The stakeholders involved include local, state, and federal government officials, government and nongovernmental agencies and organizations, residents, local property and business owners, and the military. Chapter 2 discusses the WPAFB CUP stakeholders and partners in more detail.

The CUP encourages each partner to work collectively to identify, reduce, and prevent encroachment between the current and future military missions at WPAFB and the growth and development of neighboring communities. The CUP seeks to foster and promote a set of agreed-upon recommendations, or implementation strategies, that can be executed by the military, partners, and stakeholders to achieve the following:

- Compatible development
- Greater communication
- Improved relations between WPAFB and neighboring communities, now and in the future

This Plan is an important tool for **preserving long-term compatibility** between WPAFB and the surrounding areas, where it will benefit both the installation and the surrounding region by:

- **Integrating** surrounding local jurisdiction growth policy plans with WPAFB's plans,
- **Promoting** comprehensive community planning and **guiding** compatible community growth and development through enhancing the cooperative spirit between WPAFB and the community,
- **Protecting** the health and safety of residents and workers and the viability of current and future missions by preserving long-term land use compatibility between WPAFB and surrounding communities, and
- **Supporting** and **enhancing** regional economic vitality and environmental health.

This CUP was funded through a grant from the DoD Office of OLDCC with additional contributions from the Wright-Patterson Regional Council of Governments (WPRCOG).

While the OLDCC was the primary funding source, the WPAFB CUP content was produced by and for the local stakeholders. The WPRCOG served as the managing agency for the project.

CUP Project Area

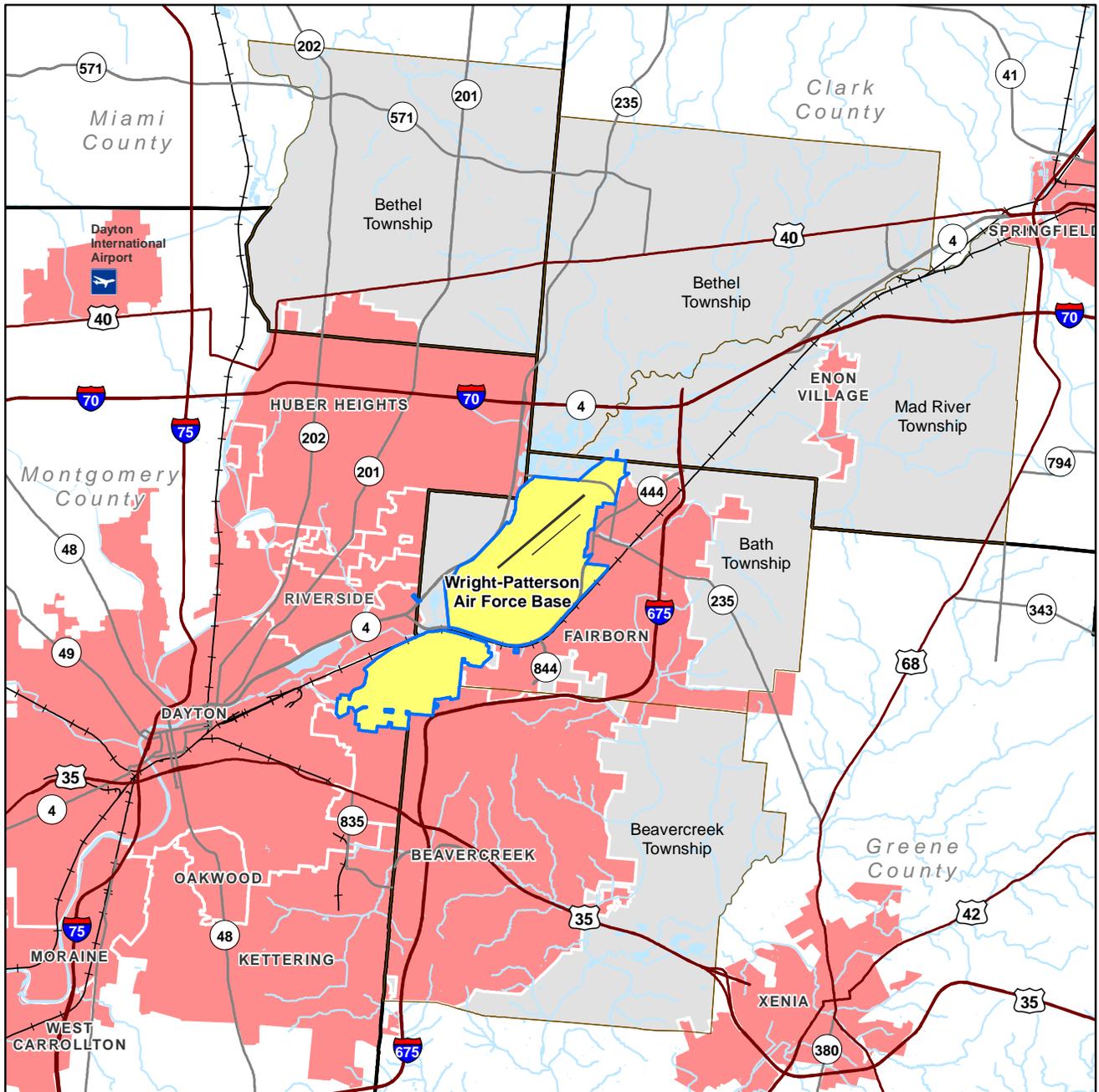
The CUP Project Area, shown in Figure 1-1, primarily focuses on WPAFB and the communities around it within the imaginary surfaces around the base. This includes the Wright-Patterson Regional Council of Governments and all land, water, and airspace surrounding the installation complex, such as the jurisdictions within Clark, Greene, Miami, and Montgomery Counties.

WPAFB is situated in the southwestern part of Ohio. It is located approximately 10 miles northeast of Dayton, Ohio's fourth-largest city, and about 60 miles west of the state capital, Columbus. The base encompasses parts of Greene and Montgomery Counties.

A mix of urban, suburban, and rural landscapes characterizes the land use around WPAFB. As the nearest major city, Dayton offers a range of amenities, services, and cultural attractions. The region is known for its diverse economy, with industries ranging from manufacturing and healthcare to research and development.

WPAFB is a significant regional presence and is crucial to the local economy. The base is one of the largest and most prominent military installations in the United States, serving as the headquarters for the Air Force Materiel Command and housing various other military units and research facilities.

The surrounding area features various communities and residential neighborhoods, and the region is well-connected by roadways, including major highways and interstates. WPAFB consists of Areas A and B. The installation is north of Beavercreek, northeast of Riverside, east of Dayton, southeast of Huber Heights, and west of Fairborn. The base's safety zones extend into rural Clark County.



Legend

- Wright-Patterson AFB
- Runway
- City Boundary
- Township
- County Boundary
- Water Body
- Interstate/US Highway
- State Route
- Railroad



Figure 1-1 Wright-Patterson Air Force Base Study Area

CUP Goals and Objectives

The primary goal of the CUP was to gather and evaluate information to reduce potential future land use and resource conflicts and enhance environmental preservation while accommodating new compatible growth and economic development. The goals include:

- An assessment of existing land use, potential growth areas, and economic development opportunities;
- Information to assist surrounding communities in making informed decisions regarding compatibility; and
- Recommended strategies for each compatibility finding to promote compatible land use planning around WPAFB and within the surrounding communities.

Three objectives are instrumental in achieving the CUP goals:



Understanding — Bring together community and military representatives to discuss compatibility issues in an open forum that considers community and military perspectives and needs. Understanding was facilitated through a cohesive education and outreach program that increased public awareness regarding land use planning and provided opportunities for input.



Collaboration — Encourage cooperative, coordinated land use and resource planning among the military and surrounding communities so that incompatible community growth and development can be avoided and ways of reducing operational impacts on lands in the CUP Project Area can be identified.



Actions — Provide a set of mutually supported tools, activities, and procedures through which local jurisdictions, agencies, the military, and other stakeholders can implement appropriate recommendations developed during the CUP.

1.3 The Purpose of Compatible Land Use Planning

A physical boundary separates WPAFB and the nearby communities, yet they share natural and man-made resources such as land, water, airspace, and infrastructure such as transportation networks and facilities. Because of these shared resources, the activities or actions of one entity can unintentionally impact another, resulting in conflicts — despite the many positive interactions among local jurisdictions, agencies, and the military. As communities develop and expand in response to growth and market demands, there is potential for incompatible development to be located closer to WPAFB’s training and operational areas. New development not properly evaluated for compatibility can generate new or exacerbate existing land use conflicts and other compatibility issues that impact the sustainability of military activities and readiness. Therefore, addressing encroachment is one of the military’s greatest operational challenges nationwide.

Collaboration among military installations, local communities, agencies, and other stakeholders is integral to protecting the long-term viability of existing and future military missions. WPAFB, WPCOG, local communities, agencies, and other stakeholders should collaborate to protect the long-term viability of existing and future military missions. Working together also enhances the health of local and regional economies and may prevent or mitigate incompatible uses that arise, which impact growth and vitality. In recognition of the symbiotic relationships that allow installations and adjacent communities to thrive, this CUP focused on assessment, education, and action.

What is Compatibility Planning?

Compatibility planning entails creating and promoting a collaborative environment in which community and military entities communicate and coordinate to identify compatibility concerns and mutually supportive actions that will allow both parties to achieve their objectives once implemented.

Assessment Factors

The WPAFB CUP assessed 25 compatibility categories to determine where there are compatibility concerns within each factor group. Community growth, quality of life, military operations, and economic drivers were all considered during the assessment process. This CUP assessed changes in the CUP Project Area since the 1997 Joint Land Use Study. These include but are not limited to:

- Community Concerns,
- Economic Trends and Regional Growth,
- New Technology and Weapon Systems, and
- Potential Threats to the Military Mission.

1.4 Partners

Involving the stakeholders and partners at the beginning of the planning process was instrumental in identifying compatibility findings of concern throughout the Project Area. These partners embarked on a collaborative process to create a locally relevant study that built consensus and obtained support from the stakeholders. Identified findings can often be resolved by collaboratively developing mutually beneficial strategies.

The stakeholders included the following:



Stakeholder and Partner Participation

Stakeholders were involved throughout the development of the WPAFB CUP. Each stakeholder had the opportunity to participate in the development and review of the Plan by visiting the virtual open house, attending public workshops, utilizing the interactive website, and taking part in the review and comment phase of the Draft CUP. Multiple public meetings were held to increase understanding of community concerns and issues with military operations, location, and the use of shared resources.

1.5 How to Use this Compatibility Use Plan

The WPAFB CUP has seven chapters. These are designed to support residents, stakeholders, and communities in understanding WPAFB and vice versa. The CUP, as used by various stakeholders, may serve different purposes. However, the core of the Plan remains the same – to inform. Decision and policymakers may use the Plan to access available strategies and solutions to achieve compatible development within the CUP Project Area. The Plan’s chapters, excluding this chapter, provide additional information on the following:

- Chapter 2 – Stakeholder Engagement – details the stakeholders, engagements, and interactions throughout the project’s life.
- Chapter 3 – Military Profile – provides an overview of the economic impact, contributions, and military mission sets occurring within the CUP Project Area.
- Chapter 4 – Community Profile – documents the various jurisdictions, communities, and resources within the CUP Project Area that contribute to the region’s diversity.
- Chapter 5 – Tools – highlights local, regional, state, and federal programs, policies, and statutes that provide grants, guidance, and support opportunities to develop compatible use partnerships in and beyond, if necessary, the CUP Project Area.
- Chapter 6 – Compatibility Assessment – presents the various compatibility findings within the CUP Project Area, identified through interviews and analysis conducted by the Project Team, and provides a compatibility assessment to promote awareness to community members, elected officials, and military leaders of solutions that involve successful compatible use strategies.
- Chapter 7 – Implementation Strategies – outlines recommendations and strategies designed to mitigate existing land use or compatibility findings between WPAFB and surrounding communities and to promote compatibility with the military mission as local growth and development continue.

Process and Timeline

Several steps were involved in the project’s development, as outlined below. The CUP process included a stakeholder and public outreach program that provided various opportunities for interested parties to contribute.



1.6 Next Steps: Implementation Working Group

The CUP will succeed if the recommendations are incorporated into future implementation activities. A Wright-Patterson CUP Partnership Committee can be established after completing the CUP as part of the implementation phase. The working group, or Partnership Committee, should contain representatives from each stakeholder participating in the CUP, with additional members included, as necessary, to address future issues or concerns.

The Implementation Plan allows local government leaders, land and resource management agencies, and military installations to consider each strategy part of existing programs as they evolve. Enhancing existing communication processes, establishing new processes and procedures, amending zoning tools, and updating long-range planning policies are some of the most cost-effective ways to ensure compatible development in the long term.

The implementation phase should discuss and develop mutually beneficial opportunities and partnerships beyond the CUP and the targeted strategies found within the Implementation Plan. The WPAFB CUP is a living document, so specific strategies may need revision as the local situation and applicable laws evolve. For more information on the Implementation Plan, see Chapter 7.



2

Stakeholder Engagement

This chapter describes the stakeholder and public engagement efforts that occurred throughout the development of the Wright-Patterson AFB Compatibility Use Plan and how the input was used to identify compatibility issues and strategies to address them.



2.1 Stakeholders

Stakeholder Identification

An early step in any study is the identification of stakeholders. Involving stakeholders at the beginning of the CUP process was instrumental in identifying compatibility issues that needed to be addressed and resolved through the collaborative development of mutually beneficial strategies. Stakeholders included individuals, groups, organizations, and government entities interested in, affected by, or affecting compatibility issues and the outcome of the CUP. Stakeholders identified for the WPAFB CUP are listed in Table 2-1 and included, but were not limited to, the following:

- Local jurisdictions
- Military installations
- Local, regional, state, and federal planning, regulatory, and resource management agencies
- Nongovernmental organizations
- Other special interest groups
- Business and commercial property owners and all residents

Table 2-1 Wright-Patterson AFB CUP Stakeholders

Public	
Residents	Neighborhood Associations
Property Owners	Business Owners
Media Outlets	
Cities and Townships	
Bath Township	Beavercreek Township
Bethel Township	Mad River Township
City of Beavercreek	City of Dayton
City of Fairborn	City of Huber Heights
City of Riverside	Enon Village
Counties	
Clark County	Greene County
Montgomery County	

Stakeholder Interviews

Stakeholder interviews allow representatives of organizations to learn about the CUP and provide input on its development. The CUP interviews occurred between February and March 2023 and were conducted in person and virtually.

One-on-one interviews allowed for more private, in-depth conversations than was possible in larger group settings and created an environment where people could openly discuss compatibility issues and concerns. The interview process allowed the Project Team to clarify project components of specific concern to stakeholders, point to where interests either align or could lead to conflict, and identify opportunities for compromise and mutually beneficial solutions. The process was further integral to data collection because it helped identify all available data and reports, supplementing formal information requests.

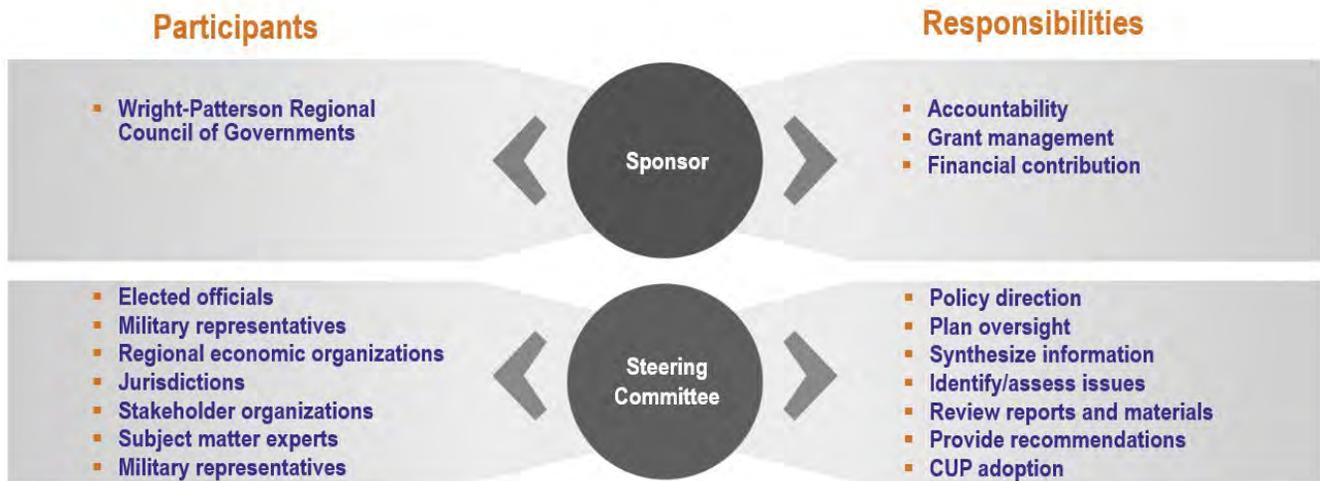
The interviews ultimately assisted the study in five important ways:

- Expanded stakeholder engagement
- Facilitated and enhanced stakeholder collaboration
- Enhanced communication between the Project Team, community leaders, and stakeholders
- Facilitated identification of compatibility issues for further assessment by the working groups
- Increased stakeholder understanding of compatibility issues and potential solutions

The interviews identified issues related to communication, land use, safety, and other variables.

2.2 Steering Committee

The CUP was guided by one committee, the Steering Committee (SC). The SC included stakeholders with diverse backgrounds and interests and provided feedback, suggestions, and guidance. These working group committee meetings were important in developing and maintaining relationships between key stakeholders, interested community members, and the CUP Project Team.



Steering Committee Roles and Responsibilities

The SC guided the CUP process and included a diverse group of stakeholders tasked with providing feedback, suggestions, and guidance to the CUP consultant, Matrix Design Group (Matrix). The SC members served as liaisons to their respective groups and communities. Committee member involvement was critical to developing and maintaining relationships among key stakeholders, interested community members, and Matrix. All members were notified of committee meeting times, locations, agendas, and upcoming public engagement opportunities.

The SC provided essential technical expertise, feedback, and real-world experience to ensure issues and recommendations with technical components are accurate, feasible, and practical for the various stakeholder groups. The SC membership included local jurisdictions, WPAFB’s technical staff, and other local subject matter experts, as needed.

The SC provided technical expertise through committee meetings, correspondence, and reviewing draft materials, including the Draft CUP. SC members also liaised with their organizations and relayed information developed throughout the CUP process.

Table 2-2 Steering Committee Composition

Jurisdictions	Agencies & Organizations	Military
<ul style="list-style-type: none"> ■ City of Beavercreek ■ City of Dayton ■ City of Fairborn ■ City of Huber Heights ■ City of Riverside ■ Bath Township 	<ul style="list-style-type: none"> ■ Dayton Development Coalition ■ Congressman Turner’s Office ■ Miami Conservancy District ■ Miami Valley Regional Planning Commission ■ Natural Resources Defense Council ■ WPCOG 	<ul style="list-style-type: none"> ■ Wright-Patterson AFB

Committee Meetings

The Steering Committee meetings were held in person and virtually throughout the CUP process to ensure that issues were accurately identified and appropriately addressed through collaborative action.

Meeting #1 – Project Kick-off – September 2022

The Steering Committee Project Kick-off Meeting was conducted in person on September 15, 2022. This meeting focused on providing an overview of the CUP project, process, and goals, identifying the roles and responsibilities of the project committees, confirming the CUP Project Area, and providing an opportunity for committee members to offer input on compatibility issues that should be addressed in the CUP.

Meeting #2 – February 2023

Steering Committee Meeting #2 was in-person on February 15, 2023. This meeting focused on a project update for the CUP and MIR projects. At this meeting, gaps in the requested data were discussed, the WPCOG and CUP websites were presented, and tools for CUP public engagement were introduced. Military footprints for noise and imaginary surfaces were also reviewed, followed by a discussion of the next steps.

Meeting #3 – August 2023

Steering Committee Meeting #3 was conducted virtually as an update to the WPCOG on August 10, 2023. This meeting provided an update on the CUP project, including an overview of the draft CUP report chapters, public engagement opportunities, and next steps for Steering Committee meetings and project milestones.

Meeting #4 – October 2023

Steering Committee Meeting #4 was conducted in person on October 10, 2023. This meeting provided a project update and reviewed preliminary issues and strategies. It concluded with a discussion of the next steps.

Meeting #5 – February 2024

Steering Committee Meeting #5 was conducted in person on February 20, 2024. This meeting focused on the CUP discussed the completed Committee Draft CUP, including issues and strategies. The meeting concluded with discussing the next steps in preparation for the Public Draft CUP.

Meeting #6 – June 2024

Steering Committee Meeting #6 was held in person on June 3, 2024. At this meeting, the Public Draft CUP was presented, and opportunities for input were provided during the review period.

Meeting #7 – August 2024

Matrix virtually participated in Steering Committee Meeting #7 on August 10, 2024. At this meeting, a CUP update was provided, and the airport zoning regulations were discussed.

Meeting #8 – November 2024

Steering Committee Meeting #8 was conducted in person on October 22, 2024. The final Compatibility Use Plan (CUP) project update was discussed at this meeting, highlighting significant progress and next steps. The CUP public review period concluded with no comments received, and the final CUP, along with an executive summary and website updates, is set for completion by November 29.

2.3 Public Engagement

Public Engagement Plan

The Public Engagement Plan was developed at the study's outset to guide stakeholder and public engagement efforts for the WPAFB CUP. Public engagement was critical for developing an effective and mutually beneficial Plan that addressed military and community needs and interests.

The public participation strategy guided the engagement process with stakeholders and the public, providing them with project information and findings to obtain meaningful input throughout the project and thereby ensuring that the goals within the CUP could be met. The Public Engagement Plan included public engagement objectives, project stakeholders, working group members, methods of engagement, and the stakeholder engagement schedule. Much of the information in the public engagement strategy is included in the CUP.

Public Meetings

Two public meetings were held at key project milestones and were widely publicized using various communication methods. Elected officials and public outreach offices from the WPAFB CUP partners, as well as stakeholders from the SC, were enlisted to help advertise the public meetings and promote the importance of participation through email, social media sites, and other forums. This approach capitalized on the CUP project contact list and the project stakeholders' existing contact lists to expand the reach of communication efforts.

Public Open House #1 – February 2023

The first Public Meeting was conducted as an in-person open house in the City of Fairborn on February 15, 2023. At this meeting, the purpose and function of the CUP were explained, an overview of the military operations at WPAFB was provided, and opportunities for further participation were highlighted. The open house allowed attendees to learn about the CUP project, WPAFB's contribution and importance to the region, and regional community demographics and economics. The meeting included an in-person community questionnaire for participants to complete and large maps to interactively identify issues or concerns about WPAFB operations and the community.

Public Meeting #2 – September 2024

The second public meeting for the Compatibility Use Plan (CUP), held on October 22, 2024, provided an overview of the project's background, objectives, and benefits while addressing key compatibility issues and proposed strategies. Participants reviewed updates to the 1996 Joint Land Use Study (JLUS), including changes in Air Force regulations, land use, and community growth. The meeting covered compatibility issues such as noise, land and airspace competition, safety, water quality, roadway capacity, and communication coordination, alongside strategies to address these challenges. Public feedback was encouraged through various channels, with next steps focusing on implementing the plan's recommendations and fostering partnerships among stakeholders to ensure alignment with Wright-Patterson Air Force Base's operational goals and regional development.

Getting the Word Out

The WPAFB CUP was promoted and supported through a dedicated, branded project website where interested parties could review and download project information, public meeting information and materials, and project deliverables. The website utilized interactive features that allowed community members to sign up for email updates, provide input, and comment on the Draft CUP.

The website also included an interactive map to identify location-specific issues and opportunities related to military activities and compatibility through IDPlaces, a dynamic interactive mapping tool. Throughout the project, eight comments were provided through IDPlaces, expressing concerns about water quality, roadway congestion, and aircraft noise.

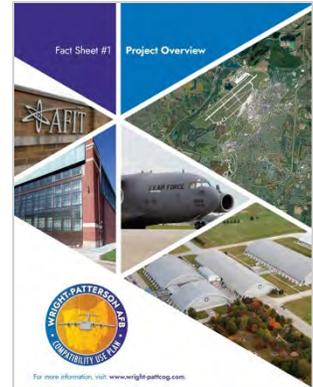


The cornerstone of effective public outreach is notifying community members about opportunities to share their thoughts and learn more about the project and identified issues. Notifications about public meetings and the Draft CUP primarily occurred through eblasts and social media posts.

Two informational brochures were developed and distributed to the WPAFB CUP working groups and the public during the CUP process. These brochures were made available via email, on the project website, and at public meetings.

Project Overview

The Project Overview describes the purpose, goals, and objectives of the WPAFB CUP and the methods through which input was provided during the Plan development phase. This sheet also summarizes the 25 standard compatibility factors or general types of compatibility findings. These factors are the initial framework to provide stakeholders with a “starting point” and a comprehensive examination of all potential conflict areas. While some factors proved irrelevant to the CUP, using this framework to help identify a broad spectrum of issues ensured the CUP was sufficiently comprehensive in its approach. The Project Overview was used to brief stakeholders who were participating in interviews and during the first public meeting.



Executive Summary

The final fact sheet summarizes the CUP and key strategies. This brochure can be used as a handout during meetings to provide an overview of the CUP and key strategy recommendations. The information in the executive summary can be distributed through the media to increase awareness of and support for the CUP and follow-on actions during the implementation phase. This brochure was provided with the final CUP.



3

Military Profile

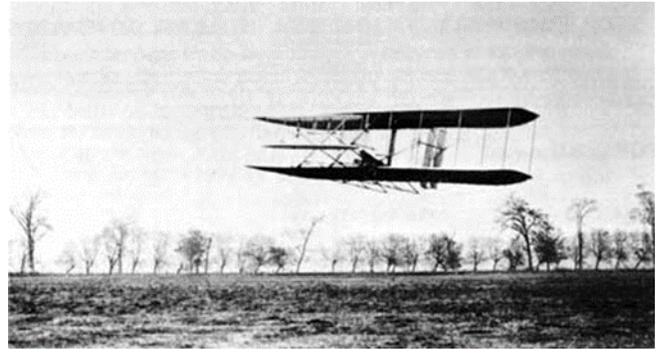
This chapter provides an overview of the physical setting, military history, and current operations at the military installation in the CUP Project Area. Identifying and describing the various activities performed at WPAFB provides valuable insight into the importance of the military as both a strong community partner and a national strategic asset. This information will help stakeholders make informed decisions regarding future development and economic growth in their communities, which may be influenced by installation activities due to their relative proximity. These decisions potentially impact the continued existence and future role of the installation.



3.1 History of Military Activities at Wright-Patterson AFB

WPAFB has a rich aviation and military history marked by several significant milestones in aeronautics. Its origins trace back to World War I (WWI), when it was involved in aviation before becoming a military installation. Today, WPAFB continues its legacy of leadership in military aviation development, a tradition that began with Wilbur and Orville Wright, pioneers of the aerospace age.

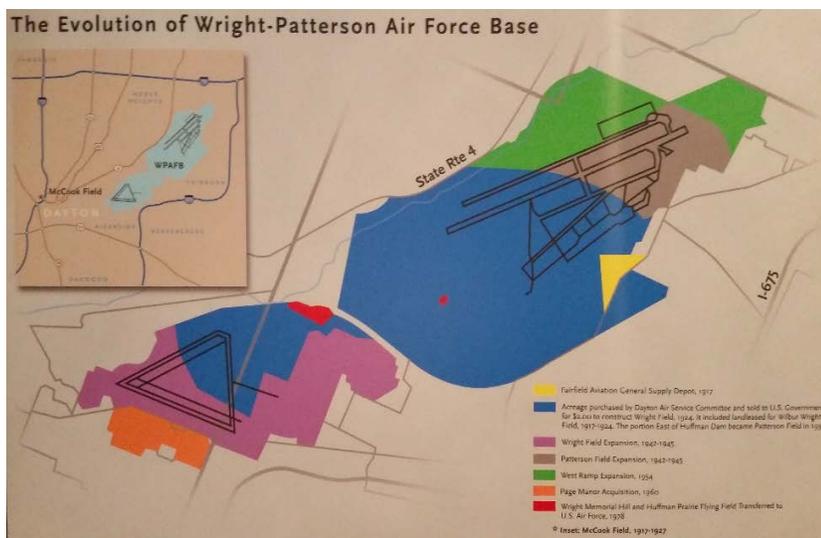
In 1903, following a successful test flight in Kitty Hawk, North Carolina, the Wright brothers purchased an 84-acre plot in Dayton, Ohio, establishing the Huffman Prairie Flying Field, now a national park.



Orville Wright on November 16, 1904 — flight 85 at Huffman

Huffman Field evolved into a research and development facility, flight test center, logistics depot, and training center. From 1910 to 1916, the Wright Company School of Aviation trained 119 pilots, including Army Lieutenant Henry “Hap” Arnold and Canadian ace Roy Brown, credited with downing the famous “Red Baron” during WWI.

In 1917, as the United States entered WWI, the War Department secured land leases and built three military installations: McCook Field, Wilbur Wright Field, and the Fairfield Aviation General Supply Depot. McCook Field was a temporary home for the Airplane Engineering Division, Wilbur Wright Field housed aviation schools, and the Supply Depot provided logistics support.



National Park Service Marker showing historical growth at WPAFB

After WWI, these sites consolidated, and in 1926, Wright Field became the headquarters of the Materiel Division. In 1931, a portion of Wright Field was renamed Patterson Field. These fields remained physically separate until after World War II (WWII) but shared missions.

During the 1930s, aeronautical engineering diversified and modernized aircraft. McCook Field focused on advanced airplane design. This effort led to the production of superior aircraft in WWII, contributing to U.S. air supremacy.

Significant advancements at WPAFB included liquid- and air-cooled engines, aircraft engine superchargers, controllable propellers, fuels, armament systems, flight instrumentation, parachutes, stealth technology, aerial photography equipment, and experimental aircraft.

When the United States entered WWII, Wright Field oversaw the wartime production of nearly 300,000 military aircraft, 802,161 engines, and 807,424 propellers. This mass production approach and accelerated flight testing reduced design-to-delivery time, ensuring air dominance over German forces during WWII and driving employment from 4,000 to over 50,000.

The Supply Depot, with 500 employees in 1939, expanded to 19,500 at its peak during the war. Over 250 buildings were constructed from 1941 to 1944. Patterson Field played a crucial role as a wartime logistics center and supply hub, overseeing numerous storage and service depots and supporting the Allied effort.

Wright Field and Patterson Field officially merged to form Wright-Patterson AFB in 1948. During the Cold War, WPAFB supported efforts like the Berlin Blockade and Airlift by providing aircraft logistics support through HQ Air Materiel Command (AMC). This involved maintaining a supply chain of parts and equipment, arranging maintenance contracts, and supplying C-54 aircraft to Germany.

The Korean War brought an increased workload and a workforce expansion to WPAFB, resulting in traffic congestion in the surrounding community. AMC set acquisition targets, leading to the production and delivery of F-84 Thunderjets and F-86 Sabre aircraft. AMC continued to manage the logistics pipeline for supplies to the conflict zone. The base hospital also played a vital role in treating wounded soldiers and was designated a “special blood collection center” by the American Red Cross.

During the Vietnam War, WPAFB experienced job growth and construction activity. The base’s laboratories contributed to aeronautical and logistical systems advancements for the military. Products like the AC-47 and AC-130 gunships; a mobile tactical air control system; the F-111, F-15, and A-10 aircraft; and others were produced. Research on aircraft like the XB-70 and B-1 was also conducted, accompanied by renovations and upgrades on the installation.

In the post-Cold War era, WPAFB continued to innovate and pioneer new technologies while upgrading tactical and strategic forces. The base provided logistical support worldwide and offered Air Force civilian and military personnel training. Research and development in hypersonic technologies became a focus.

In 1995, WPAFB hosted peace talks between the Balkan conflict parties, leading to the signing of the Dayton Peace Agreement. More recently, WPAFB participated in Operation Enduring Freedom and Operation Iraqi Freedom by providing manpower, weapon systems, technology, innovation, and ingenuity. To this day, WPAFB remains the logistical and training epicenter of the United States Air Force.



C-54 supporting the Berlin Airlift

3.2 Military Economic Importance

The military significantly contributes to the economy in the CUP Project Area, with its impact felt through direct spending and the ripple effects of direct and indirect employment, leading to job creation. WPAFB, primarily situated in Fairborn, Ohio, but adjacent to several other cities, is the State's largest single-site employer. Per the *2021 Wright-Patterson Economic Impact Analysis*, there is a total of **53,350 personnel** including dependents at the installation. This total number is split between:

- 10,420 personnel classified as appropriated fund military,
- 14,738 personnel classified as appropriated fund civilians,
- 10,288 personnel classified as non-appropriated fund contract civilians and private businesses, and
- 17,904 military dependents.

Economic Impact

According to the *Ohio Military & Federal Factbook 2021*, the military and federal government had a significant economic impact statewide, totaling nearly \$69 billion, which accounted for 6% of Ohio's economy. Of this, direct military and federal spending amounted to \$22.2 billion. Notably, the western region of Ohio saw a substantial influence, with nearly 15% of its total economy being driven by military and federal expenditures.

According to the *2021 Wright-Patterson Economic Impact Analysis*, within Ohio's overall economic landscape influenced by the military and federal government, Wright-Patterson made a significant mark with a total annual economic impact of approximately **\$6.5 billion**. This impact was distributed across various areas, including:

- Annual payroll of around \$3.4 billion,
- Yearly expenditures of about \$1 billion, and
- Estimated annual value of jobs created totaling approximately \$2.1 billion.

Employment Impact

Due to the critical support required by WPAFB and the essential jobs needed to maintain mission readiness, numerous indirect positions have been generated. The *2021 Wright-Patterson Economic Impact Analysis* details both the total number of indirect jobs and their estimated annual value. Specifically, there are 4,272 indirect jobs stemming from the 10,420 active-duty base jobs, 23,139 indirect jobs linked to the 14,738 directly appropriated fund civilian base roles, and 16,152 indirect jobs associated with other civilian base positions. Altogether, these direct personnel base jobs create a total of **43,563 indirect jobs**, resulting in an estimated annual economic impact of approximately \$2.1 billion.

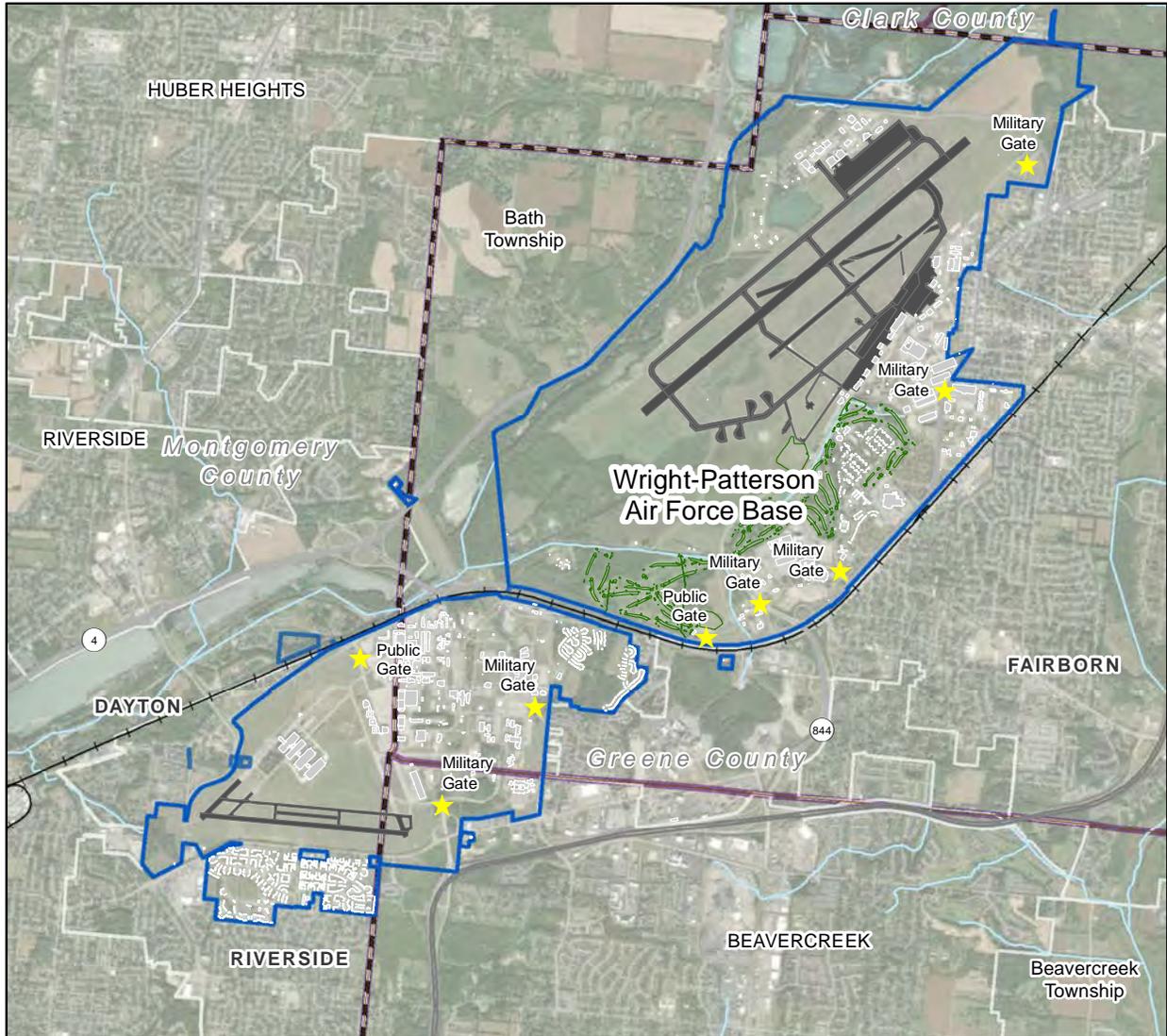
3.3 Installation Overview

WPAFB, spanning 8,751 acres across Greene and Montgomery Counties, houses essential United States Air Force components. It is a hub for the Air Force Materiel Command (AFMC), responsible for developing and procuring new Air Force technology and equipment. Additionally, it is the headquarters for the Air Force's Life Cycle Management Center (AFLCMC), the Air Force Research Laboratory (AFRL), and the National Air and Space Intelligence Center.

The base accommodates 15 Air Force units and over 115 tenants and boasts two runways. Beyond its military functions, WPAFB is home to the National Museum of the United States Air Force, the world's largest military aviation museum, and the Air Force Institute of Technology (AFIT), which provides advanced education and research in technical fields.

This installation, shown on Figure 3-1, is vital to the U.S. Air Force's mission, advancing military technology and bolstering the nation's capabilities. Administratively, the base is divided into Area A and Area B, which are separated by State Route 444 (SR-444) and railroad tracks. Area A, the larger of the two, encompasses various planning districts, housing an active runway complex, warehouses, offices, industrial facilities, and flight line support. Across the highway, Area B comprises four districts – Wright Field, two districts dedicated to research facilities, and one district for privatized housing.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN



- ★ Gate
- Township
- Interstate/US Highway
- Wright-Patterson AFB
- ▬ County Boundary
- State Route
- City
- Railroad
- Airfield
- Building
- Golf Course



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023



Figure 3-1 Installation Setting

Area A

Area A serves as the primary section of the base and houses several significant units and activities:

- **Air Force Materiel Command:**

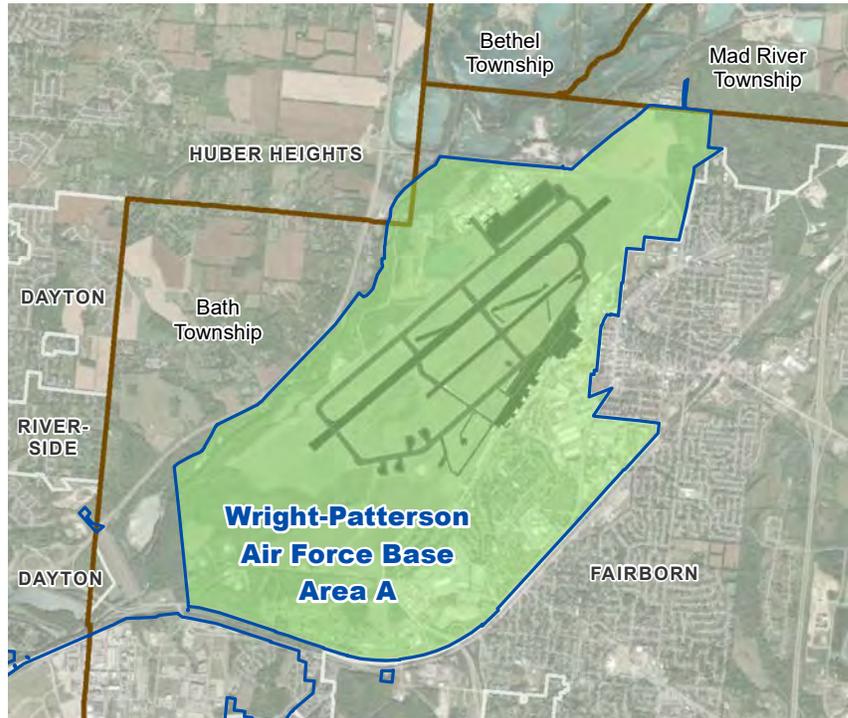
This command oversees the development and acquisition of new technology and equipment for the Air Force.

- **Base Support and Services:**

Area A also houses essential support functions crucial for the base's operation, such as medical facilities, security forces, and base operations.

- **Logistics and Sustainment**

Organizations: They include the AFLCMC, which manages the acquisition and sustainment of Air Force weapons systems, and the Air Force Installation and Mission Support Center (AFIMSC) Detachment 6, which offers support services to Air Force installations worldwide.



These key units and activities within Area A are integral to advancing the Air Force's mission and capabilities.

Area B

Area B is instrumental in advancing aerospace technology and ensuring the Air Force's leadership in technological innovation. This area primarily focuses on researching, developing, and testing advanced technologies and weapons systems, contributing to modern warfare readiness. Key military activities in Area B include the following:

- **Aerospace Systems Directorate:**

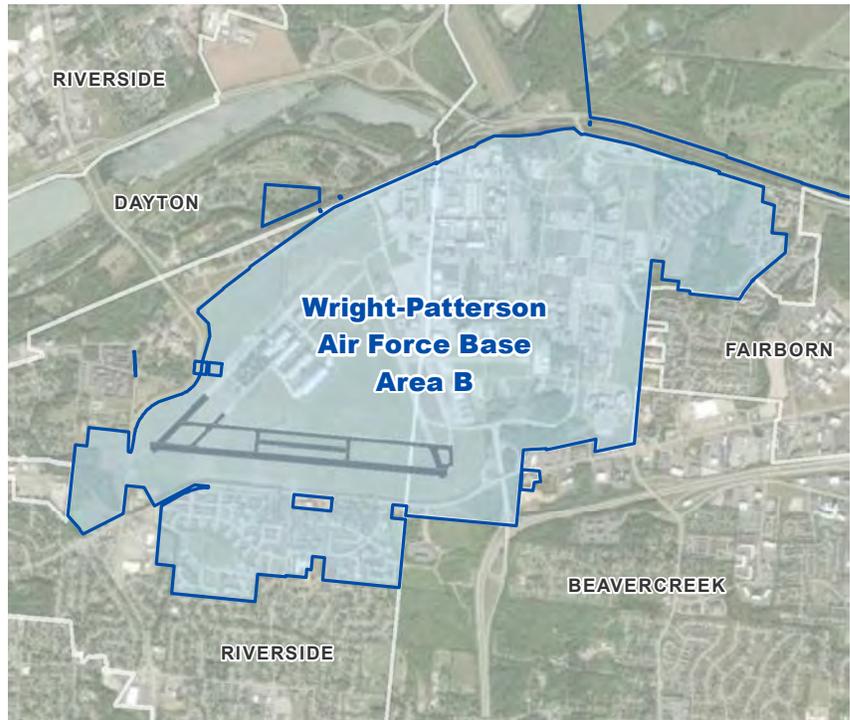
This research organization specializes in advancing aerospace technologies and systems, including hypersonics, autonomous systems, and materials science.

- **Air Force Institute of Technology Center for Directed Energy:**

This research center develops, and tests directed energy technologies, including lasers and high-powered microwave emitters. Its work aims to enhance directed energy systems and explore novel applications.

- **Training and Education Organizations:** The area also accommodates AFIT, which provides graduate-level education and research programs for military and civilian personnel.

- **Research and Development Organizations:** Area B is also home to AFRL, which conducts research spanning aerospace systems and technology, energy, sensors, and materials science.



3.4 Major Units and Force Structure

WPAFB is a pivotal hub for the United States Air Force, offering logistical, research and development, educational, and intelligence functions. The base is hosted by the 88th Air Base Wing, which is home to numerous important units and organizations, including the following:

88th Air Base Wing: As the host organization for WPAFB, the 88th Air Base Wing operates the airfield, manages air traffic control, maintains facilities, and provides security, communications, legal, personnel, finance, and transportation services. Additionally, it deploys Expeditionary Airmen in support of joint operations and operates the Wright-Patterson Medical Center.



Air Force Materiel Command: Headquartered at WPAFB, AFMC oversees the development and acquisition of new Air Force technology and equipment globally. It manages installation and mission support, research and development, testing and evaluation, and life-cycle management services for major Air Force weapons systems. AFMC employs nearly 89,000 personnel and manages a budget of \$67 billion.

Air Force Life Cycle Management Center: AFLCMC manages the entire life cycle of weapons systems and aircraft, from research and development to acquisition, logistics support, and maintenance. This includes systems like Information Technology, Command, Control, Communications, Intelligence, Surveillance and Reconnaissance, armaments, strategic systems, aerial platforms, and specialized supporting systems. AFLCMC also executes sales of aircraft and other defense-related equipment while building security assistance relationships with foreign partner nation air forces.



Air Force Research Laboratory: AFRL leads the way in discovering, developing, and delivering new air, space, and cyberspace technologies. The 711th Human Performance Wing, part of AFRL, researches aerospace and human-machine interface subjects and hosts the U.S. Air Force School of Aerospace Medicine.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Air Force Institute of Technology: AFIT is the premier institution for advanced academic education within the Department of the Air Force. It plays a crucial role in graduate education, research, and professional continuing education focused on sustaining America's air, space, and cyber forces' technological supremacy.



National Museum of the U.S. Air Force: This museum, open to the public, is the world's oldest and largest military aviation museum. It collects, preserves, researches, and displays military aircraft, aerospace vehicles, missiles, and historical artifacts.

445th Airlift Wing: An Air Force Reserve unit based at WPAFB, the 445th operates nine C-17 Globemaster III transport airplanes, specializing in aeromedical evacuation and strategic cargo delivery.



Air Force Installation and Mission Support Center (AFIMSC) Detachment 6:

AFIMSC manages programs like readiness, morale, communications, engineering, logistics, and security from its headquarters at Joint Base San Antonio-Lackland. It operates globally with locations in 140 sites, supported by four primary units and 10 detachments serving Air Force and Space Force commands. AFIMSC Detachment 6 is located at Wright-Patterson AFB.

1st Field Investigations Region (AFOSI): Headquartered in Quantico, Virginia, with a regional office at Wright-Patterson AFB, OSI oversees the Department of Defense Cyber Crime Center and manages the U.S. Air Force Special Investigations Academy. While regions support their commands' investigative needs, OSI units maintain legal independence from those commands, ensuring impartial investigations with direct chains of command to OSI headquarters.





338th Recruiting Squadron (AETC): The 338th Recruiting Squadron is part of the 360th Recruiting Group. Based at Wright-Patterson Air Force Base, it covers a vast area across five states, operating 46 recruiting offices and three Military Entrance Processing Stations. With 87 personnel, its mission is to inspire and recruit future Airmen to bolster American airpower.

Naval Medical Research Unit Dayton (NAMRU): NAMRU Dayton, part of the Navy Medicine Research & Development Enterprise, conducts research at Wright-Patterson Air Force Base, focusing on environmental health effects, toxicology, and aerospace medicine. Its mission is to boost operational forces' readiness and survivability, while its vision is to excel in enhancing human performance and protection in extreme environments.



National Air and Space Intelligence Center (NASIC): Headquartered at WPAFB, it serves as the Air Force's intelligence center, the nation's air and space intelligence center, and the primary source for analyzing foreign air, space, missile, and cyber threats. Its intelligence informs multi-domain operations, weapons system acquisition, and national defense policy. NASIC at WPAFB has the largest number of Guardians outside of United State Space Force (USSF) bases and one-third of the USSF's intelligence community.

655th Intelligence, Surveillance, and Reconnaissance Wing: An independent wing under the 10th Air Force, Air Force Reserve Command, it is headquartered at WPAFB, where it specializes in intelligence, surveillance, and reconnaissance.



Air Force Audit Agency: It provides high-quality audit services to aid Air Force leadership in making informed decisions.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Air Force Installation Contracting Center (AFICC): Headquartered at WPAFB, it manages and executes operational acquisition solutions across the Air Force.



Office of Special Investigations (OSI): It is the Air Force's exclusive investigative agency handling military-related felony-level crimes, counterintelligence matters, and criminal activities involving fraud on Air Force installations in the United States and overseas.

73rd Intelligence, Surveillance, and Reconnaissance Squadron, U.S. Space Force: This squadron conducts global intelligence, surveillance, and reconnaissance operations to support the research, development, and acquisition pertaining to future space capabilities.



3.5 Aircraft Operations

WPAFB maintains two operational runways. The main runway, 05L/23R, is classified as Class B, primarily catering to high-performance and large, heavy aircraft. The secondary runway, 05R/23L, is designated as Class A, mainly intended for small and light aircraft, although it continues to handle cargo and fighter aircraft operations, including C-130 and C-17 aircraft.

The third runway at Area B – Runway 09 (Wright Field) – is typically closed but occasionally used for transporting aircraft to the National Museum of the U.S. Air Force or for special aerial events, subject to prior coordination for use.

The planning and execution of flight activities, including flight paths, altitude, frequency, and timing, necessitate thorough evaluation to comprehend their impact on land use. Flight paths are developed based on information from air traffic controllers, pilots, and various other sources. These paths consider several factors, such as prioritizing routes that avoid densely populated areas, adhering to specific U.S. Air Force criteria related to aircraft performance (e.g., speed, climb rate, turning radius), minimizing noise disturbances, and coordinating with the Federal Aviation Administration (FAA) to prevent conflicts with civilian aircraft. While established flight patterns represent typical operations, variations can occur due to weather conditions, mission requirements, and other air traffic considerations. The types of flight operations regularly conducted at WPAFB include:

- **Arrivals and Departures:** Aircraft arriving at and departing from the base;
- **Training Sorties:** Training flights aimed at enhancing pilot skills and mission readiness;
- **Mission-Specific Flights:** Aircraft operations linked to specific missions and objectives;
- **Maintenance and Test Flights:** Flights associated with aircraft maintenance and testing procedures; and
- **Special Events:** Flights conducted for unique events, demonstrations, and relocation of aircraft to the museum.

Each flight operation is meticulously planned and executed with consideration for safety, operational requirements, and minimizing disturbances to surrounding communities.

Types of Aircraft

WPAFB only has one permanently assigned aircraft, the C-17. Additional transient aircraft, or “visiting aircraft,” are also common at the Installation. Transient aircraft is the term used to describe aircraft that are based out of a different installation and that utilize another airfield for occasional transient purposes. These purposes may include official visits or to conduct operations on the airfield. The combination of permanent and transient aircraft creates a unique operational noise footprint at the Wright-Patterson airfield.

Below is a brief description of the C-17 and common transient aircraft that residents will see in the skies above and around WPAFB.

Permanently Assigned Aircraft

C-17

The C-17 Globemaster III is the most flexible cargo aircraft to enter the airlift force. The C-17 can rapidly and strategically deliver troops and all types of cargo to bases worldwide. The aircraft's primary mission is to perform tactical and strategic airlift and airdrop, transport troops and cargo, and transport patients during aeromedical evacuations. The C-17 plays a logistical role in wartime operations and humanitarian aid during regional conflicts or after natural disasters such as earthquakes or floods.



C-17s fly over Blue Ridge Mountains, 2005

Transient Aircraft

C-12

The C-12 Huron is a military version of the Beech Super King. The C-12 is primarily used for range clearance, embassy support, humanitarian assistance, medical evacuation, VIP transport, and passenger and light cargo transport. The Huron model features a cargo door with a built-in airstair to provide easy access for passengers. The flight deck and cabin are modified to support high-altitude flights.



MC-12 arriving at Bagram Airfield, Dec. 27, 2009



C-21 departs over Scott AFB - Feb 26, 2021

C-21

The C-21 is a twin-engine turboprop aircraft used for passenger and cargo airlift. The aircraft is the military version of the Learjet 35A business jet. As an instrument of diplomacy, the C-21 can be used to transport general officers and other high-ranking government officials to locations around the world. The C-21 also provides aeromedical evacuation.

C-37

The C-37 is a twin-engine turboprop aircraft acquired to fulfill the worldwide special airlift missions of high-ranking government and DoD officials around the globe. The aircraft has commercial and military communications equipment to provide secure/nonsecure voice and data capability. The C-37 conducts intercontinental flights with cruise altitudes between 41,000 and 51,000 feet.



C-37 taxiing at Mountain Home AFB, June 19, 2022



C-130 flying over Wyoming in appreciation of COVID-19 frontline workers, May 15, 2020

C-130

The C-130 performs tactical airlifts. Capable of operating on rough dirt strips, it is the primary transport for airdropping troops and cargo into hostile environments. The aircraft supports peacetime and wartime operational needs for airlift support, resupply, aeromedical missions, weather reconnaissance, and firefighting duties for the U.S. Forest Service and natural disaster relief missions. The C-130 can be rapidly reconfigured for various types of cargo, such as palletized equipment, floor-loaded materials, airdrop platforms, container delivery system bundles, vehicles and personnel, or for aeromedical evacuation.

F-16

The F-16 utilized by the 180th Fighter Wing (FW) operating out of Swanton, Ohio, near Toledo, transits WPAFB regularly due to the close proximity and the aircraft arresting barrier installed on the runway at WPAFB, which allows the runway to be used as a divert airfield for that type of aircraft. The F-16 is a highly maneuverable and versatile fighter aircraft with exceptional combat range and all-weather capabilities. It excels in air-to-air and air-to-surface missions, boasting precise weapon delivery, self-defense capabilities, and advanced avionics systems. Its streamlined design incorporates technologies from successful predecessors while maintaining strength.



A U.S. Air Force F-16 Fighting Falcon flies over Afghanistan, March 17, 2020, sourced from the U.S. Air Force

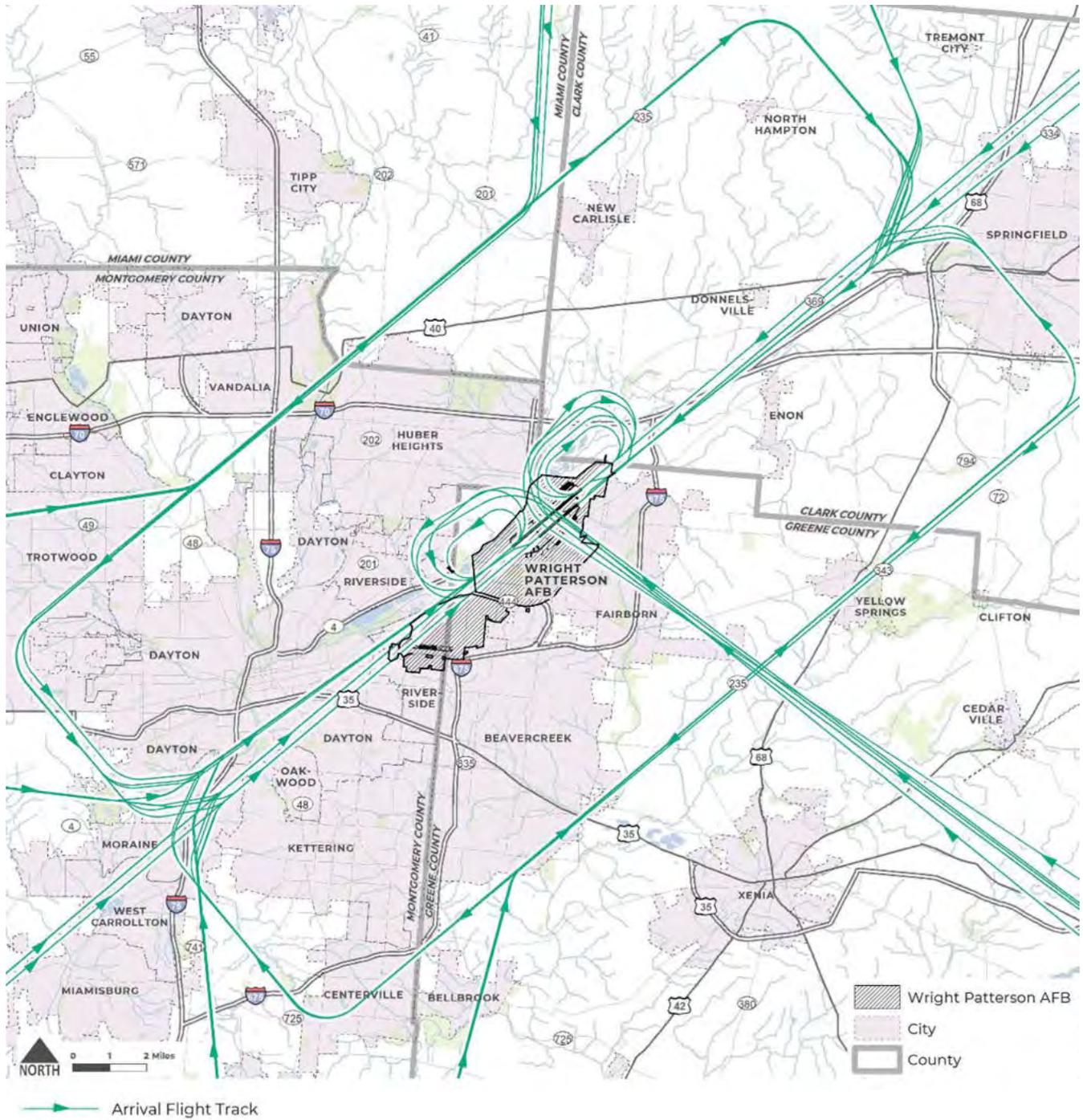
Flight Tracks

The majority of flights at WPAFB, approximately 96%, take place between 7 a.m. and 10 p.m. Among these flights, the primary runway, 05L/23R, is utilized for 94% of flight operations. Specifically, aircraft using runway 05L typically arrive from the direction of Dayton and depart in the direction of Springfield, while aircraft using runway 23R arrive from the direction of Springfield and depart toward Dayton. The flight tracks are shown on Figures 3-2, 3-3, and 3-4.

It is important to note that flight operations in the airspace do not adhere to fixed pathways similar to vehicles on highways. Although represented as lines on the maps provided, flight paths can vary based on factors such as pilot techniques, aircraft takeoff weight, prevailing wind patterns, and guidance provided by air traffic control centers to ensure safe separation and coordination.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Figure 3-2 Aircraft Arrival Tracks



WPAFB AICUZ Arrival Flight Tracks, 2022

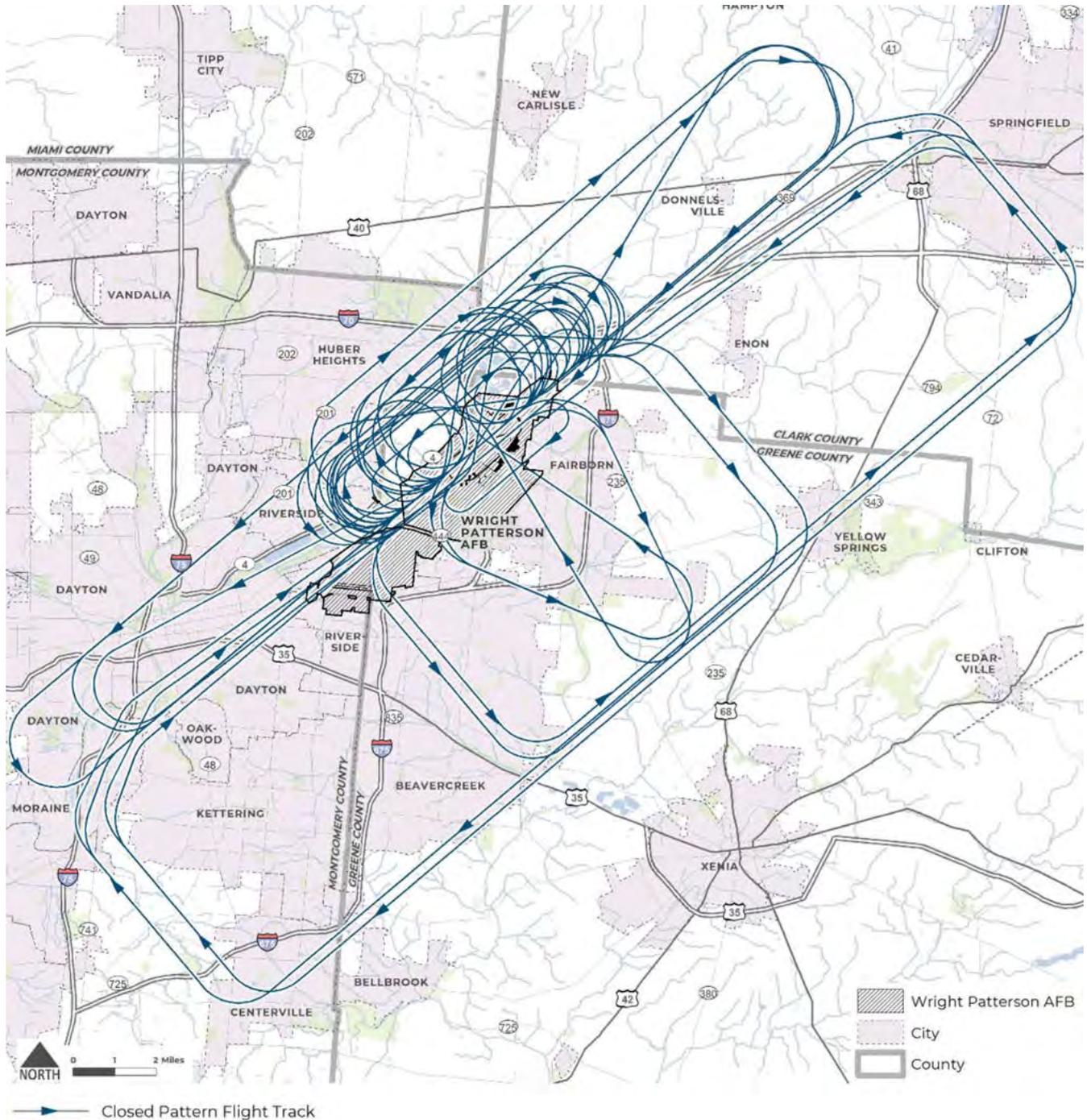
Figure 3-3 Departure Flight Tracks



WPAFB AICUZ Departure Flight Tracks, 2022

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

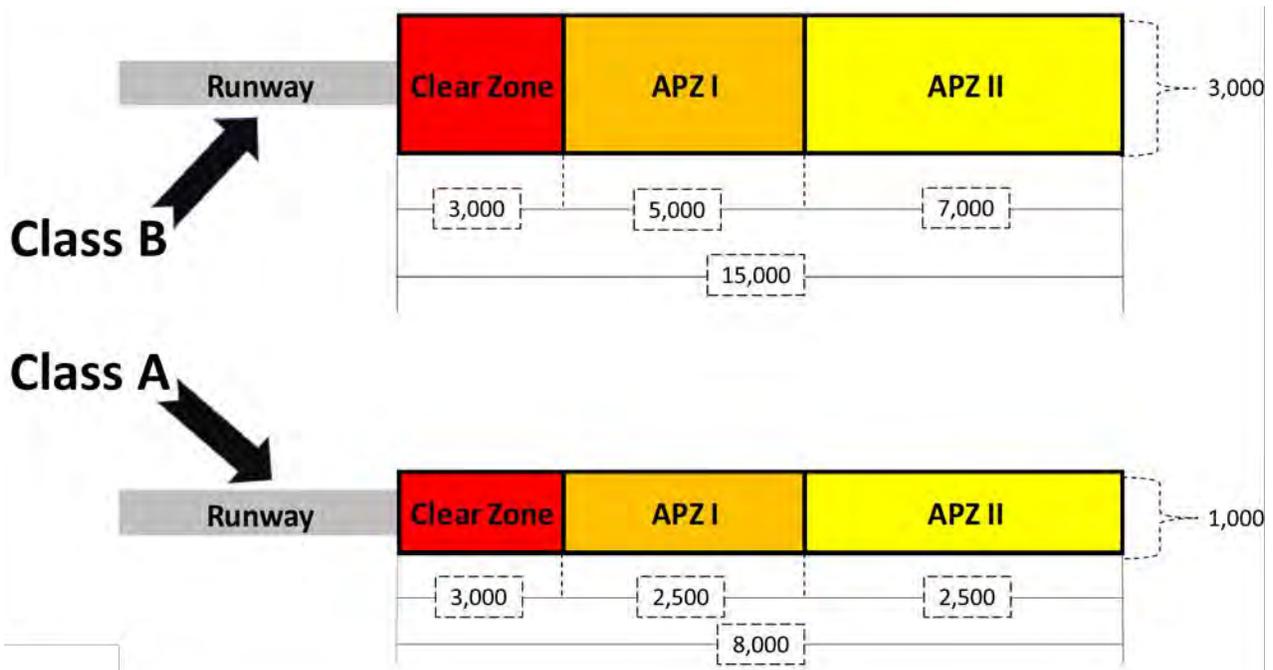
Figure 3-4 Closed Pattern Flight Tracks



WPAFB AICUZ Closed Pattern Flight Tracks, 2022

3.6 Operational Safety

Safety zones are associated with active runways and are designed to limit and guide development to protect the safety of the public and aircrews. Within the safety zones, shown on Figure 3-5, people and intensive land use should be limited. The DoD has established safety zones around runways and landing areas based on historical data on where an aircraft accident is most likely to occur. These safety zones are the clear zone (CZ), accident potential zone I (APZ I), and accident potential zone II (APZ II). These zones are based on the dimensions of the runway. Curved APZs are developed based on an installation’s utilization rate of certain flight patterns. WPAFB has both Class A and Class B runways. Their compatibility guidelines are the same; only their dimensions differ.



DoD Airplane Accident Potential Zones Dimensions

The safety zones are part of the planning toolbox for local planning agencies to encourage compatible growth within areas where an aircraft mishap is statistically most likely to occur, if such an event were to happen. These zones restrict land use types, density, and height to promote compatible economic development. For safety reasons, CZs should be entirely clear of any obstructions, whether natural or man-made, unless they are necessary for aircraft landing. It is the DoD’s policy to acquire the land or a long-term lease or easement, when possible, to prevent any development or growth within the CZ. The guidelines for development within APZ I are less stringent than in the CZ, but development should be limited, and residences are not recommended. Fewer restrictions apply within APZ II; residential development is allowed to promote the retention of family farming, but it generally remains incompatible.



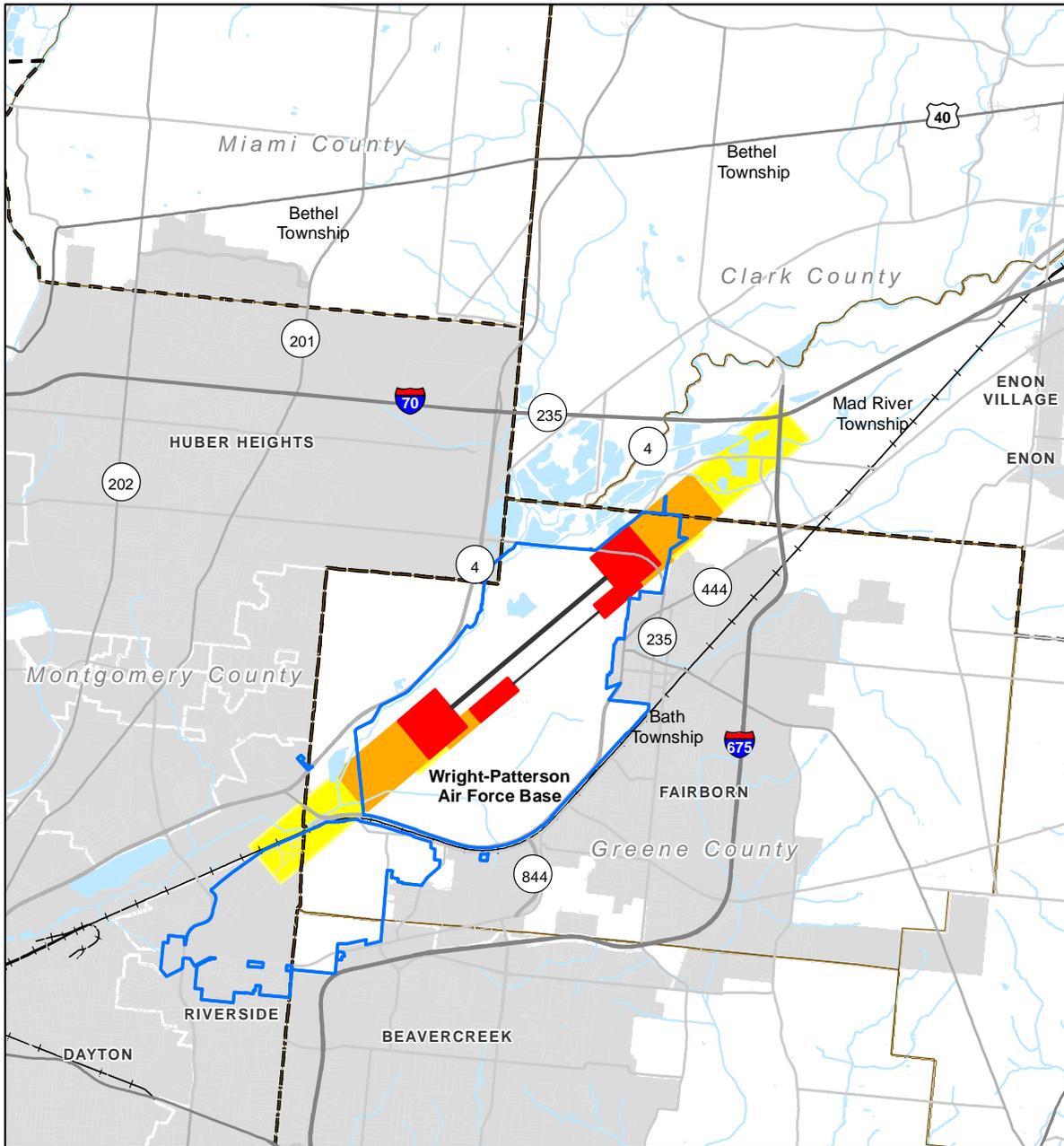
WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

The dimensions for Class B CZs and APZs are per the requirements of UFC 3-260-01 for Airfield and Heliport Planning and Design and are described as follows:

- The CZ is where an aircraft mishap is most likely to occur. Air Force clear zones are a square 3,000 feet by 3,000 feet centered on the end of each runway. Permitted land uses within this zone are considerably limited, including transportation, communication, utilities, infrastructure necessary for airfield operations, unoccupied open space, and limited agricultural space.
- APZ I is located adjacent to the CZ boundary and the runway. This zone extends for 5,000 additional feet with a width of 3,000 feet. This area typically experiences fewer accidents than the CZ and has fewer restrictions. Floor Area Ratio (FAR) guidelines have been developed for permitted uses and to limit large gatherings. The suggested maximum occupancy for all venues and structures is 25 people per acre. Permitted land uses within this zone are limited to non-occupied structures; thus, residential land uses are prohibited.
- APZ II begins at the outer boundary of APZ I and extends for a length of 7,000 feet with a width of 3,000 feet. APZ II is where development is the least restricted due to the lower risk of accidents as it is farther from the runway. The suggested maximum occupancy throughout is 50 people per acre. Warehouse and maintenance facilities are permitted within the footprint, and other permitted uses should follow the FAR guidelines. Single-family residential is discouraged. However, a maximum of two dwelling units per acre is permitted to encourage the retention of farming and open space, as recommended by the DoD.

Class A runway APZ restrictions are the same as Class B. The dimensions differ and are described below:

- CZ: 1,000 feet by 3,000 feet off the center of the runway
- APZ I: Adjacent to the clear zone, 1,000 feet wide by 2,500 feet long
- APZ II: Adjacent to APZ I, 1,000 feet wide by 2,500 feet long



Airfield Safety Zones

- Clear Zone (CZ)
- Accident Potential Zone I (APZ I)
- Accident Potential Zone II (APZ II)
- Runway

- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Major Road
- Local Road
- + Railroad



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.

0 1/2 1 2 Miles
 Figure 3-5 Airfield Safety Zones

3.7 Operational Noise

Aircraft operations produce noise when conducting overflight, takeoffs, landings, and engine maintenance run-ups, which are procedures performed on the airfield to test for proper engine performance. The Air Force considers how its operations impact the local community by calculating an average-weighted noise level measured as a day-night average sound level (DNL). Whether the noise from flight operations is a nuisance depends on the land use on the ground and how the aircraft noise is perceived by an individual. Noise associated with aircraft is usually considered a nuisance where land uses are incompatible with aircraft operations. The noise contours for WPAFB are shown on Figure 3-6.

Decibels and Weighting

The standard for the loudness of sound or noise levels is a quantity known as the “decibel” (dB). The threshold of pain for humans is 120 dB. A whisper is between 20 dB and 30 dB, a noisy conversation is about 50 dB, a vacuum cleaner is about 70 dB, a lawn mower is about 90 dB, and a car horn at one meter is about 110 dB.

The human ear is not uniformly sensitive to all frequencies of sound. Most common sound sources are measured using A-weighted decibels (dBA). The A-weighting corresponds to the ear’s sensitivity and deemphasizes very high and low sound frequencies to reflect only the frequencies people hear. The military typically uses A-weighting to describe sound from generators, aircraft, and general transportation. Large-caliber weapons firing and detonations are assessed with C-weighted decibels as they better represent the sound and vibrations that people experience.

What is Operational Noise?

Operational noise is sound from military operations (aircraft, munitions, weapons firings, etc.). Long-term exposure from operational noise on surrounding communities is the most persistent and costly encroachment challenge for the DoD. Operational noise often extends beyond the fence line and tends to be more apparent to the public than other visual or environmental factors. As a result, operational noise generates many complaints from communities and is often the most prominent discussion point and decision-making factor in land use planning surrounding military installations.

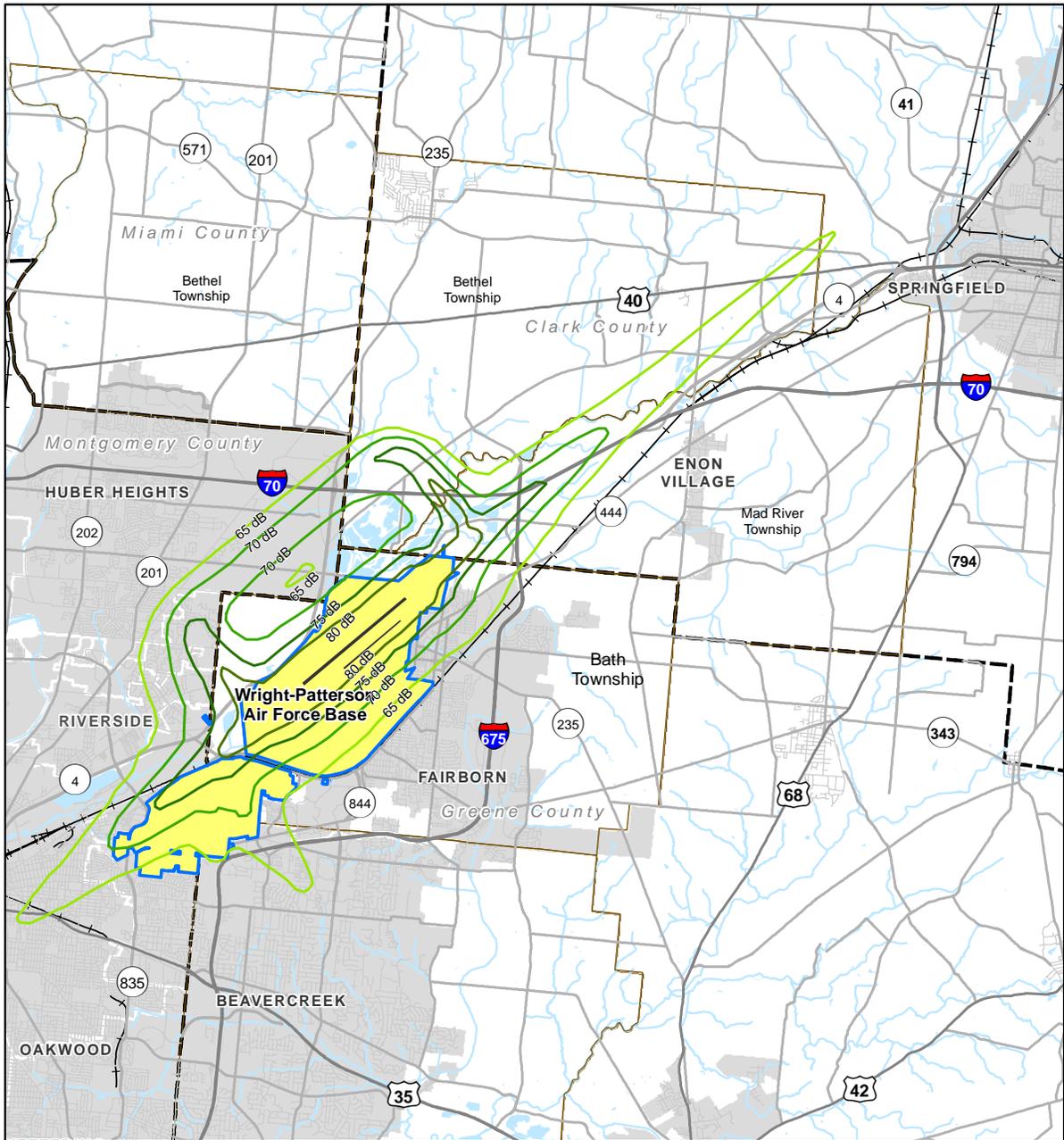
How is Operational Noise Displayed and Discussed?

Federal, state, and local agencies use a set of standard metrics and measurements to describe noise when assessing land use compatibility and conducting noise studies and management. Each metric or measurement is used differently depending on the source or type of sound to ensure community exposure is appropriately measured and addressed. The differences in these metrics often confuse installation personnel and communities, who may not realize that sound may be assessed in various ways.

DNL is the most widely used metric to describe, assess, and predict long-term sound exposure. The DoD uses DNL to determine land use compatibility for operational noise. The FAA and DoD use A-weighted DNL to describe and display aviation sound. Flight operations fluctuate throughout the week, month, and year, creating a challenge for appropriately planning within the noise environment. DNL provides and represents an average of the sound produced throughout the day and is averaged over a period of time. For land use planning purposes, the period is often one year. Using a year's worth of operations, the DoD accounts for large-scale exercises and nighttime training to develop an operational noise footprint showing the average sound levels communities experience.

Noise contours are generally displayed in five-decibel increments from 65 dBA to 80 dBA. The best way to visualize the sound levels of operational noise is by displaying a gradient map. However, that is not always possible. These are ideal because they visualize how sound dissipates from the source and how it moves differently than expected or anticipated in some areas, such as in the mountains or over water.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN



2022 Noise Contours

- ▭ 65 dB
- ▭ 70 dB
- ▭ 75 dB
- ▭ 80 dB
- Runway

- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Major Road
- Local Road
- Railroad



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.



Figure 3-6 Airfield Noise Contours

3.8 Operational Airspace

WPAFB's airspace is governed by the FAA. The FAA designates airspace around WPAFB as Class D airspace, which extends from the surface to an altitude of 2,500 feet above the airport's elevation.

The lateral boundaries of the WPAFB airspace are defined by a circle with a radius of 4.4 nautical miles centered on the airport's control tower. Pilots must establish two-way radio communication with the air traffic control tower (ATCT) within this area and receive instructions to enter the airspace. Additionally, several restricted military operating areas (MOAs) are close to WPAFB. These areas are designated for military training activities and may be active at various times, restricting access to civilian aircraft.

Pilots must review current charts and NOTAMs (Notices to Air Missions) before flying near WPAFB to ensure they know about current airspace restrictions or other aviation-related information.

Imaginary Surfaces

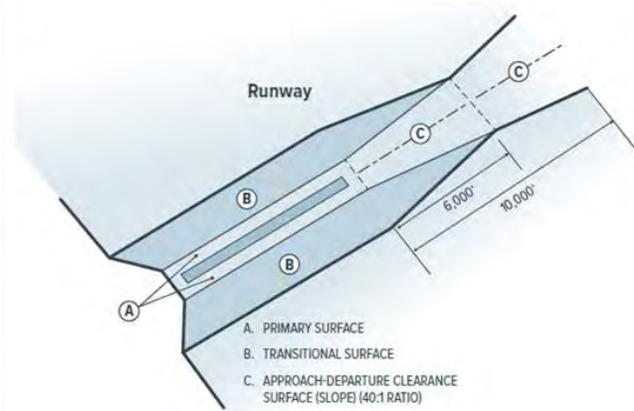
Federal Aviation Regulations, Part 77 and DoD UFC 3-260-01, Airfield and Heliport Planning and Design, specify a series of imaginary height restriction surfaces surrounding military-use airfields to mitigate vertical obstructions relative to the airspace around a runway. The imaginary surfaces of an active runway are used to define the required airspace that must remain free of vertical obstructions near aviation operations to optimize safe flight operations. The various imaginary surfaces build upon one another. They are designed to guide the height of structures so that there are no vertical obstructions to air navigation and operations, whether natural or man-made.

The DoD and FAA identify a complex series of imaginary planes and transition surfaces that together define the airspace needed to remain free of obstructions around an airfield. Obstruction-free imaginary surfaces form a "bowl" around the airfield to ensure safe flight approaches, departures, and pattern operations. Obstructions include natural terrain and man-made features such as buildings, towers, poles, wind turbines, cell towers, and other vertical obstructions to airspace navigation. Height restrictions apply to transitional surfaces and approach and departure surfaces. Aboveground structures on the primary surface are not permitted. WPAFB has both Class A and Class B surfaces. The imaginary surfaces are visualized on Figure 3-7.

There are fewer restrictions on Class A runways as they are smaller than Class B runways; Class A runways are described and visualized below:

- **Primary Surface:** An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end, that defines the limits of the obstruction clearance requirements in the vicinity of the landing area. The width of the primary surface is 1,000 feet, or 500 feet on each side of the runway centerline.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN



Imaginary surfaces and transitional planes for Class A runways

■ Approach-Departure Clearance Surface:

An imaginary surface symmetrically centered on the extended runway centerline, beginning as an inclined plane (glide angle) at the end of the primary surface (200 feet beyond each end of the runway) and extending for 10,000 feet. The slope of the approach-departure clearance surface is 40:1 until it reaches 250 feet above the established airfield elevation. The width of this surface at the end of the primary surface is 1,000 feet, flaring uniformly to a width of 2,500 feet at the endpoint.

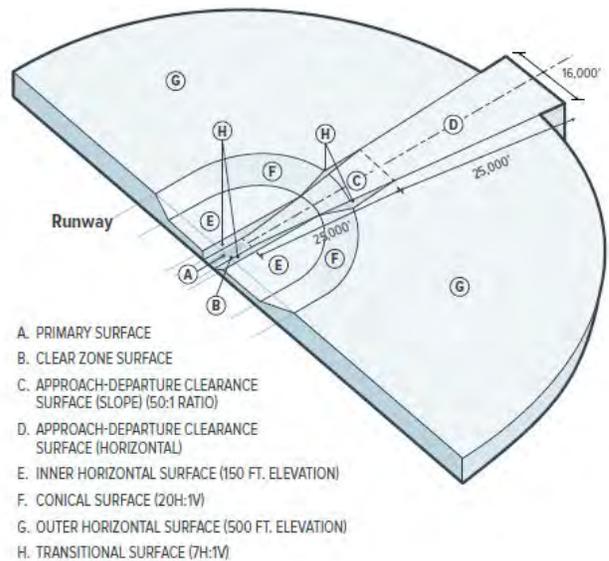
- **Transitional Surface:** A surface that extends outward from the edge of the primary surface and upward at an angle to the runway centerline. It extends the runway centerline at a slope of 7:1 until it reaches a point 150 feet above the established airfield elevation. The transitional surface edge is parallel to the edge of the primary surface along the length of the runway and extended runway centerline. From there, the transitional surface extends in a straight line to the point at which it connects to the approach-departure clearance surface at 150 feet above the established airfield elevation.

Class B surfaces are described and visualized below:

- **Primary Surface:** An imaginary surface symmetrically centered on the runway, extending 200 feet beyond each runway end, that defines the limits of the obstruction clearance requirements near the landing area. The width of the primary surface is 2,000 feet, or 1,000 feet on each side of the runway centerline.

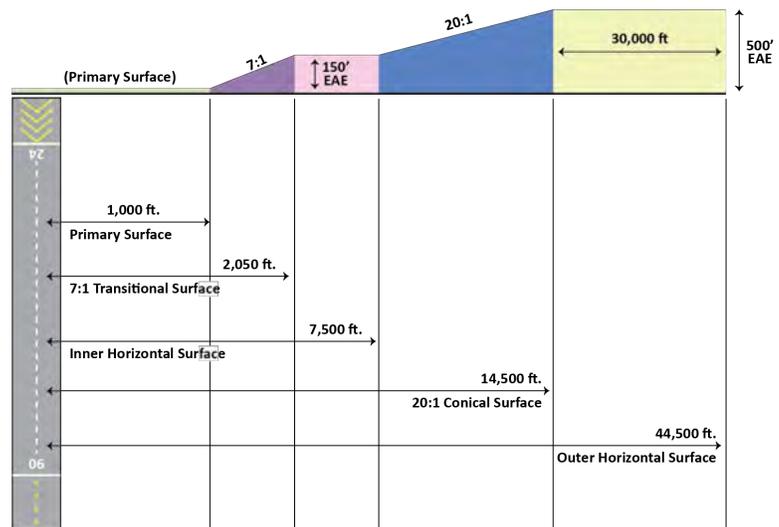
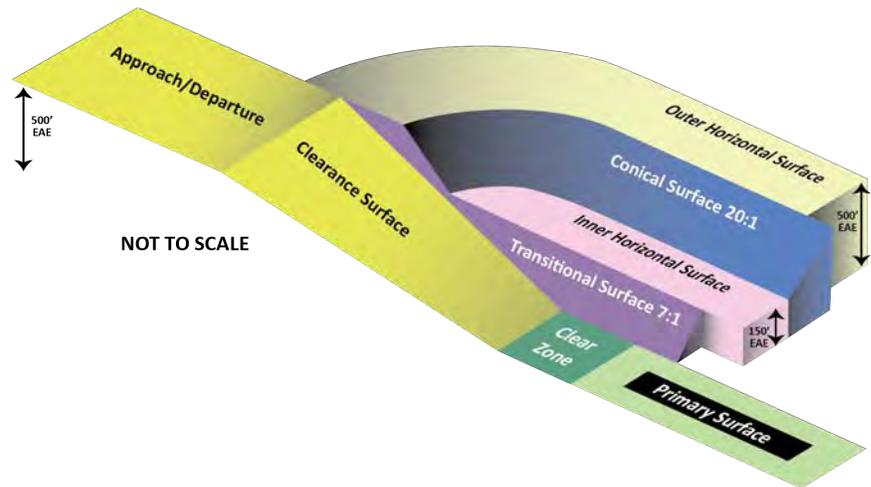
■ Approach-Departure Clearance Surface:

An imaginary surface symmetrically centered on the extended runway centerline, beginning as an inclined plane (glide angle) at the end of the primary surface (200 feet beyond each end of the runway) and extending for 50,000 feet. The slope of the approach-departure clearance surface is 50:1 until it reaches an elevation of 500 feet above the established airfield elevation. It then continues horizontally at this elevation to 25,000 feet from the starting point. The width of this surface at the runway end is 2,000 feet, flaring uniformly to a width of 16,000 feet at the end.



Imaginary surfaces and transitional planes for Class B runways

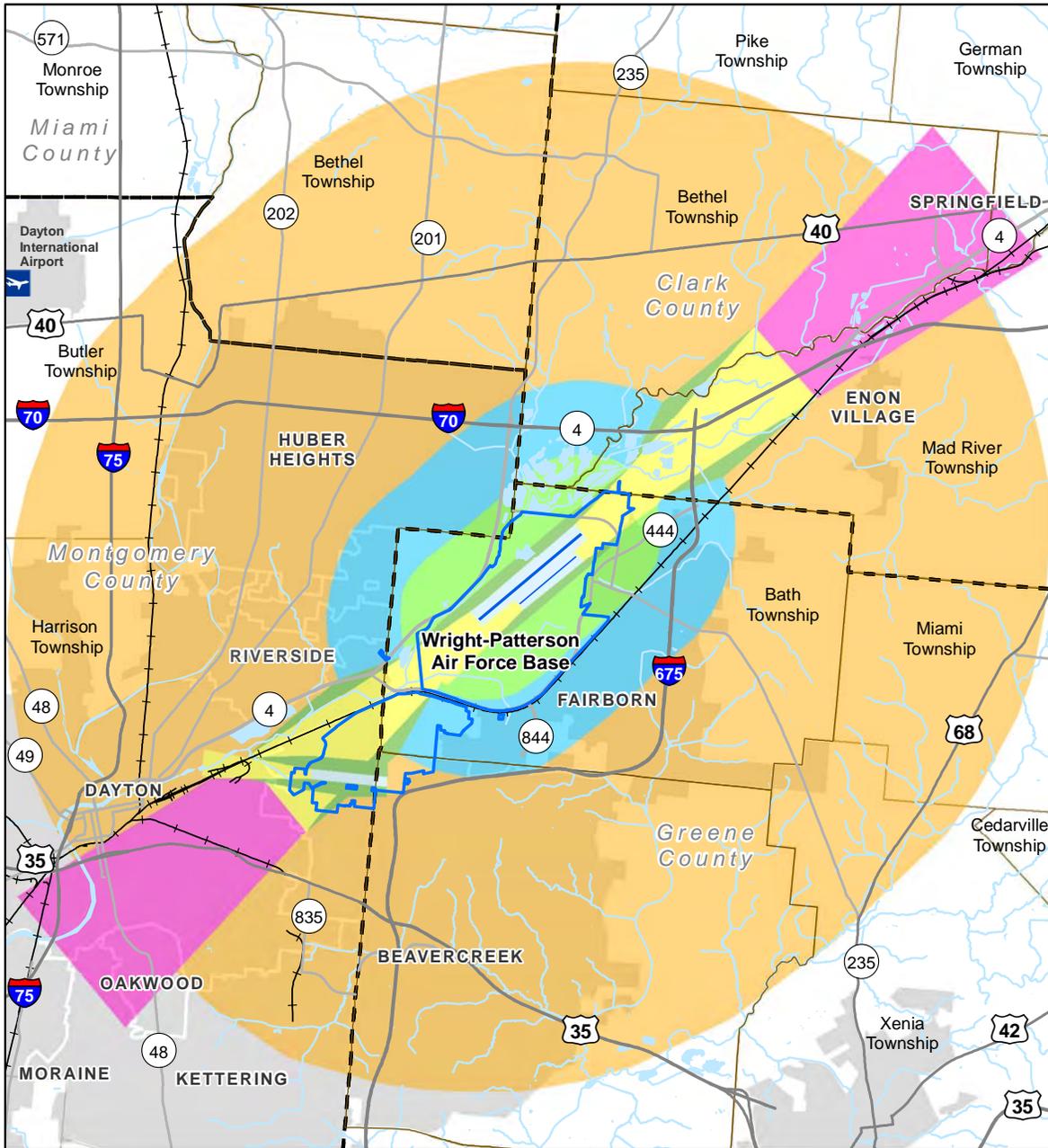
- Inner Horizontal Surface:** An imaginary surface that is an oval plane 150 feet above the established airfield elevation. The inner boundary intersects with the approach-departure clearance surface and the transitional surface. The outer boundary is formed by scribing arcs with a radius of 7,500 feet from the centerline of each runway end and interconnecting these arcs with tangents.
- Conical Surface:** An inclined imaginary surface extending outward and upward from the outer periphery of the inner horizontal surface for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation. The slope of the conical surface is 20:1. The conical surface connects the inner and outer horizontal surfaces.
- Outer Horizontal Surface:** An imaginary surface 500 feet above the established airfield elevation and extending outward from the outer periphery of the conical surface for a horizontal distance of 30,000 feet.
- Transitional Surface:** An imaginary surface that extends outward and upward at an angle to the runway centerline and extended runway centerline at a slope of 7:1. The transitional surface connects the primary and the approach-departure clearance surfaces to the inner horizontal, conical, and outer horizontal surfaces.



Imaginary Surfaces Cross Section

A three-dimensional cross section of the imaginary surfaces for runways shows the slope of the surfaces that help guide military/community planners in land use planning around an airfield. Structures should not exceed these heights to protect the navigable airspace associated with the airfield, the safety of pilots and people, and the land uses on the ground. This is especially important in the CZ and along the approach-departure surfaces.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN



- | | | |
|---------------------------------------|----------------------|-----------------------|
| Imaginary Surface | Wright-Patterson AFB | Interstate/US Highway |
| Primary Surface (Surface) | City | State Route |
| Approach/Departure (Sloped 1:50ft) | Township | Railroad |
| Approach/Departure (Horizontal 500ft) | County Boundary | |
| Inner Horizontal Surface (150ft) | | |
| Conical Surface (Sloped 1:20 ft) | | |
| Outer Horizontal Surface (500ft) | | |
| Transitional Surface (Sloped 1:7 ft) | | |
| Runway | | |



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023

0 1 2 4 Miles **Figure 3-7 Imaginary Surfaces**

3.9 Vertical Obstruction Evaluation

Federal Aviation Regulation Title 14, Part 77 (14 CFR 77) establishes standards and notification requirements for objects affecting navigable airspace and provides the basis for evaluating vertical obstructions. This regulation provides information to assess a proposed structure or facility's height, elevation, and location relative to the airfield. The field elevation (the highest point) of WPAFB's runways is 823 feet above mean sea level.

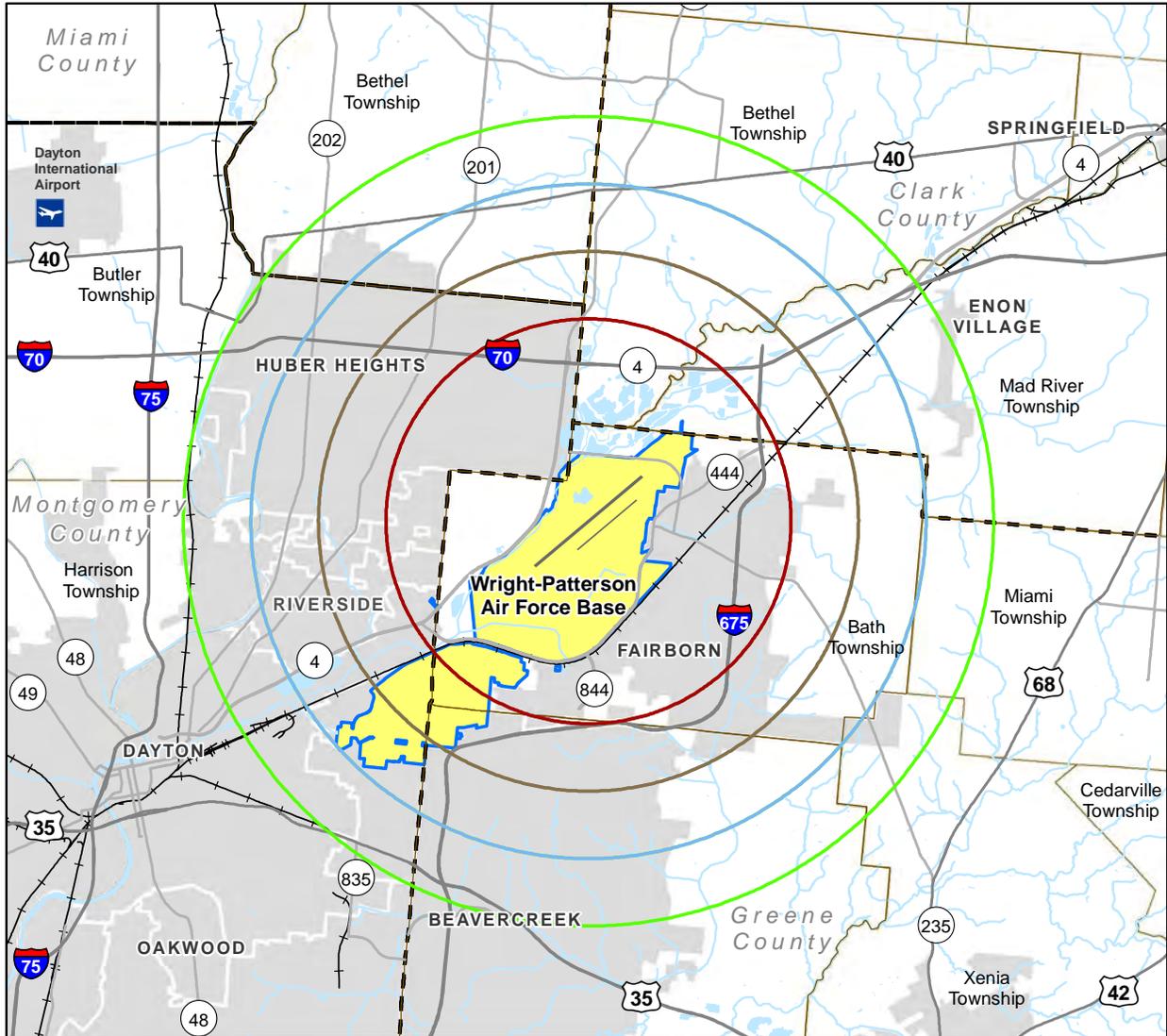
14 CFR 77 determines compatibility based on the height of proposed structures or natural features relative to their distance from a runway. These are often digitally mapped and available on community mapping portals. Local jurisdictions use a distance formula to assess the height restrictions near an airfield. The regulation defines an obstruction to air navigation located within the imaginary surfaces using the criteria below:

- A height of 499 feet above ground level (AGL) at the site of the object.
- A height 200 feet AGL or above the established airport elevation, whichever is higher, within three nautical miles of the selected reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length. This height increases by 100 feet for each additional nautical mile of distance from the airport up to a maximum of 499 feet.
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.
- A height within an en-route obstacle clearance area, including turn and termination areas of a federal airway or approved off-airway route, would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of a civilian airport or any imaginary surface established under 77.19, DoD 77.21, and heliports: 77.2; however, no part of the takeoff or landing area itself will be considered an obstruction.
- Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of paragraph (a) of this section (14 CFR 77) apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:
 - 17 feet for an interstate highway that is part of the National System of Military and Interstate Highways, where overcrossings are designed for a minimum of 17 feet vertical distance.
 - 15 feet for any other public roadway.
 - 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.
 - 23 feet for a railroad.



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Projects that trigger Part 77 review must undergo an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA), in which the FAA reviews a proposal and identifies potential hazards to aviation. Evaluation zones and the distance for each zone are shown on Figure 3-8. If the FAA has concerns, it may require avoidance or minimization, lighting, or other measures to ensure airspace safety for military and civilian purposes. If potential impacts to military operations are identified, the project must also undergo formal or informal review by the Military Aviation and Installation Assurance Siting Clearinghouse. The Clearinghouse will evaluate the compatibility of the proposed project with military missions.



Part 77 Obstruction Evaluation Area

- Up to 200' @ 3NM
- Up to 300' @ 4NM
- Up to 400' @ 5NM
- Up to 500' @ 6NM

- Runway
- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- +— Railroad



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023

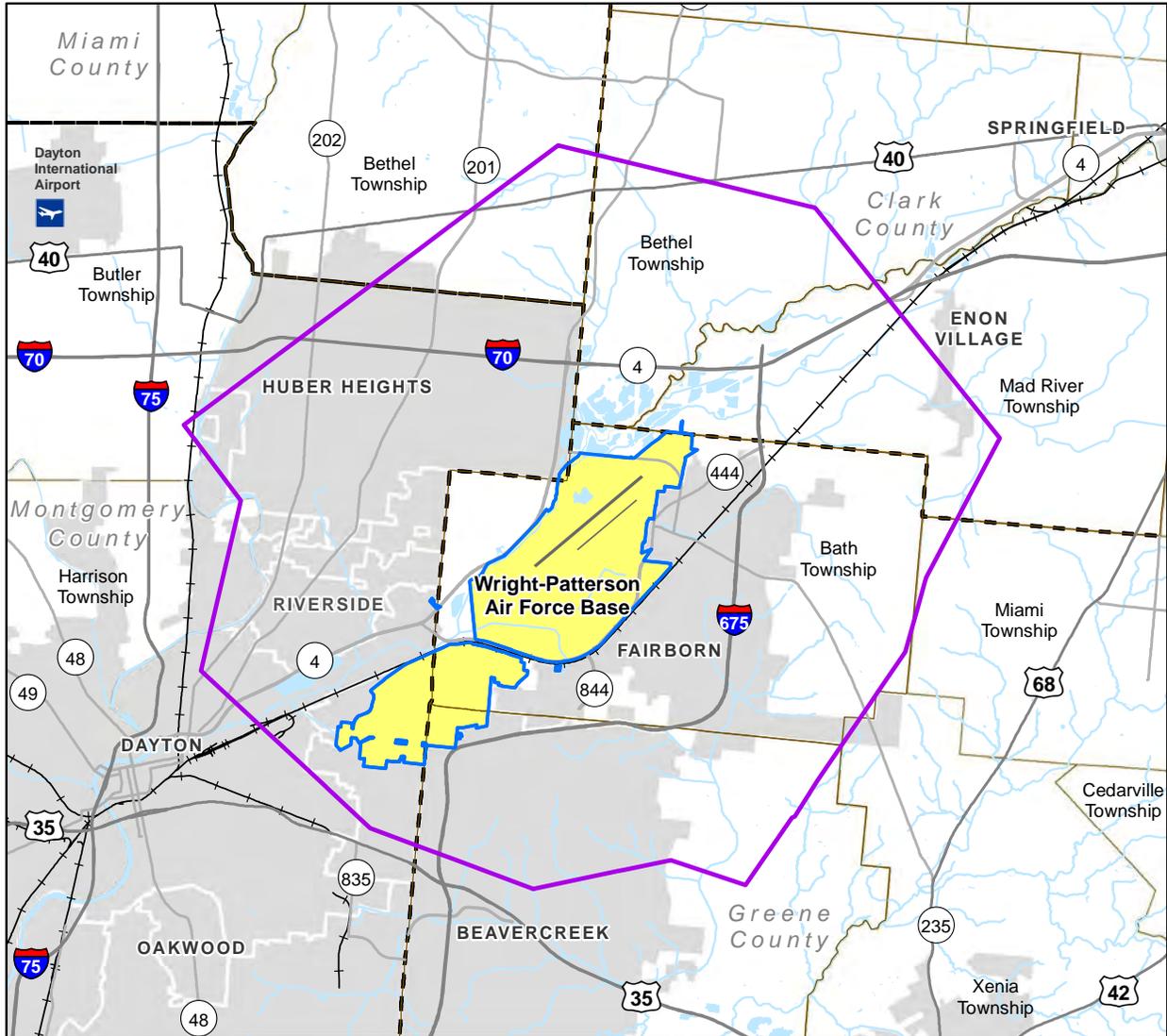


Figure 3-8 FAA Part 77

3.10 Bird/Wildlife Aircraft Strike Hazard Relevancy Area

Birds and animals can present a significant hazard to military flight operations. While fatal accidents resulting from bird or wildlife strikes have been limited at WPAFB, impacts are a safety concern and can cause significant damage to aircraft.

Figure 3-9 shows the FAA-designated five-mile bird/wildlife aircraft strike hazard (BASH) relevancy area around WPAFB. The BASH relevancy area is where the FAA recommends land use controls and/or design measures to reduce the risk of BASH incidents. The primary recommendation made by the FAA is to create and manage a minimum horizontal separation distance between an airfield and wildlife attractants. The recommended separation distance extends five miles from the perimeter of the Air Operations Area (AOA) at WPAFB – areas including paved and unpaved areas associated with aircraft movement (i.e., runways, taxiways, and aprons). This area was determined to be significant by the FAA as aircraft are more likely to strike birds and wildlife due to ascending or descending altitudes. In contrast to the imaginary surfaces, the area measuring five miles from the AOA does not include a height aspect since it deals with managing terrestrial features like land use and water.



- 5-mile BASH Area
- Wright-Patterson AFB
- City
- Township
- County Boundary
- Runway
- Interstate/US Highway
- State Route
- Railroad



Source: Matrix Design Group, 2023.



Figure 3-9 Bird Air Strike Hazard

3.11 On-Base Resources

In addition to the previously mentioned military activities, Area A also houses many support functions necessary for the base to operate, such as medical facilities, security forces, and base operations. Overall, Area A plays a critical role in supporting the Air Force's mission and maintaining the readiness of its personnel and equipment. These range from educational and training opportunities to recreational and entertainment options. The installation provides services that include shopping facilities, childcare centers, housing areas, and a large medical center.

Notable amenities located in Area A include the following:

- Base Exchange (BX) and Commissary: These facilities offer shopping options for military personnel and their families, including various retail stores, food courts, and other services.
- Fitness Centers: These facilities include the base's main fitness center, which features a weight room, cardio equipment, and various fitness classes.
- Golf Courses: The base has three golf courses — an 18-hole golf course and a 9-hole course at Prairie Trace and an additional 18-hole course at Twin Base. These facilities also feature driving ranges, putting greens, and pro shops.
- Outdoor Recreation: Wright-Patterson AFB has several outdoor recreation facilities, including Bass Lake Lodge, an RV park, and a campground.
- Education Center: The base's Education Center provides educational and training opportunities for military personnel and their families, including classes, workshops, and counseling services.

Childcare

Wright-Patterson Child Development Centers (CDCs) provide safe, healthy environments for children ages six weeks through five years old. The CDCs provide childcare in Areas A and B and the Prairies through their four facilities. The CDCs are accredited by the National Association for the Education of Young Children (NAEYC) and certified by the DoD and the Air Force. Children of active-duty military members and DoD civilians are eligible for childcare at the CDCs.

The CDCs offer:

- Full-time care,
- Weekly care,
- Before- and after-school care, and
- Hourly care.

Housing

Military members and their families have several options for housing at WPAFB. The housing options include single-family homes, duplexes, and townhouses. Privatized military housing is also an option for military members and their families. Under this program, private companies manage and maintain the housing on military installations. The housing is generally newer and offers more amenities than traditional military housing. The housing options at WPAFB include:

- 1,539 privatized housing units managed by Properties at Wright Field,
- 100 brick homes in Area A managed by the Civil Engineering Housing Office, and
- Six permanent-party dormitories with 406 rooms.
- Off-base housing options are additionally available for military members and their families who choose to live in the surrounding civilian community.

BAH Rates

BAH, or Basic Allowance for Housing, is a military benefit provided to service members without government housing. The purpose of the benefit is to assist service members with the cost of housing in the civilian community.

BAH rates vary by location and are determined based on several factors, including the service member’s pay grade, dependency status, and duty station location. The rates are calculated based on local housing costs, including rental prices, utilities, and other expenses.

The DoD reviews BAH rates annually, considering changes in local housing costs and other economic factors. The rates are generally adjusted to reflect changes in the cost of living, so service members should expect to see changes in their BAH rates from year to year. BAH rates for 2024 are shown in Table 3-1.

Table 3-1 2024 BAH Rates

Military Rank	With Dependents	Without Dependents	Military Rank	With Dependents	Without Dependents
E1 – E4	\$1,347.00	\$1,011.00	O1	\$1,485.00	\$1,236.00
E5	\$1,455.00	1,137.00	O1E	\$1,755.00	\$1,452.00
E6	\$1,647.00	\$1,245.00	O2	\$1,644.00	\$1,419.00
E7	\$1,740.00	\$1,350.00	O2E	\$1,890.00	\$1,536.00
E8	\$1,842.00	\$1,500.00	O3	\$1,908.00	\$1,572.00
E9	\$2,001.00	\$1,545.00	O3E	\$2,058.00	\$1,635.00
W1	\$1,662.00	\$1,323.00	O4	\$2,244.00	\$1,740.00
W2	\$1,785.00	\$1,497.00	O5	\$2,484.00	\$1,863.00
W3	\$1,911.00	\$1,554.00	O6	\$2,502.00	\$1,890.00
W4	\$2,037.00	\$1,665.00	O7	\$2,520.00	\$1,917.00
W5	\$2,193.00	\$1,761.00			

Wright-Patterson AFB Housing

Publicly Accessible Resources

Huffman Prairie Flying Field

In 1990, the Wright brothers' original 84.42-acre test and training field was officially listed as a National Historic Landmark. Adjacent to the property is the Huffman Prairie, 109 acres that form the largest natural tallgrass prairie remnant in Ohio. A replica of the Wright brothers' 1905 hangar was constructed here. In 1992, the Huffman Prairie Flying Field became part of the Dayton Aviation Heritage National Historical Park.



Golf Course

Wright-Patterson offers public access to one of its two golf courses. The Twin Base Golf Course, featuring 18 holes, welcomes military, civilian, and public players alike. It boasts amenities such as a driving range, three practice greens, a pro shop, and the Jones Room, an ideal space for events and gatherings.



Rod and Gun Club

Wright-Patterson Air Force Base hosts a public Rod and Gun Club, where visitors can participate in trap and skeet shooting. No military ID is required. Safety is paramount, with mandatory briefings and strict rules on gun handling. The club rents shotguns and offers affordable rates for shooting sessions. Open daily, it welcomes shooters of all skill levels and ages, fostering a community of safety and respect.



4

Community Profile

This chapter provides information about the surrounding communities in the Wright-Patterson AFB CUP Project Area. This information is intended to be considered with other factors to help decision-makers generate informed planning policies about future development and economic growth to mitigate compatibility issues.



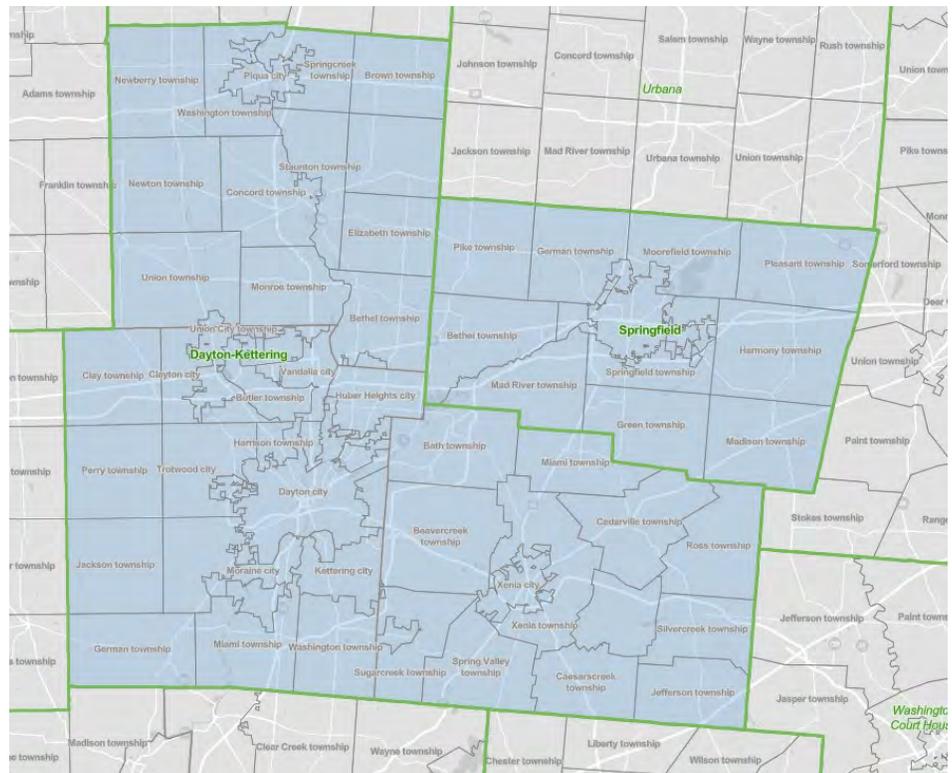
WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

This chapter provides information about the communities, agencies, and organizations that participated in the WPAFB CUP. These include the following:

- Counties
 - Clark
 - Greene
 - Montgomery
- Townships
 - Bath
 - Bethel
 - Beavercreek
 - Mad River
- Cities
 - Beavercreek
 - Dayton
 - Fairborn
 - Huber Heights
 - Riverside
- Villages
 - Enon
- Agencies and Organizations
 - Dayton Development Coalition
 - Miami Conservation District
 - Wright-Patterson AFB Joint Airport Zoning Board
 - Miami Valley Regional Planning Commission
 - Wright-Patterson AFB Council of Governments
 - Wright State University

This chapter details the community partners within the CUP Project Area and pertinent community information such as population, housing, economic trends, current development, transportation, and natural resources. This regional profile provides a better appreciation of the communities in the WPAFB CUP Project Area and their relationship to WPAFB.

The first phase of identifying land use compatibility is describing certain demographic characteristics of the communities within the CUP Project Area. This knowledge provides the baseline context for informed decisions when assessing compatibility strategies. The goal of the CUP is to provide information that enables stakeholders to understand population and development trends that can affect the future of military installations and communities within the Dayton-Kettering Metropolitan Statistical Area (MSA) – comprised of Greene, Miami, and Montgomery Counties – along with Clark County. The airspace around WPAFB and a portion of the base north of Area A is in Clark County or the Springfield MSA.



Dayton-Kettering and Springfield MSAs

This information and other factors will help decision-makers generate coherent, informed planning policies about future development and economic growth to mitigate compatibility issues. This chapter aims to foster an understanding of land use and activities that occur “outside the fence” of WPAFB when considering future missions and operations.

This southwestern region of Ohio has a rich history in agriculture, manufacturing, and shipping industries, with recent growth in science, technology, engineering, and math (STEM), higher education, healthcare, and aerospace. The metropolitan area is anticipated to continue as a leader in innovation and development in the region.

4.1 Community Partners

The local communities provide housing, amenities, and critical infrastructure that support WPAFB. Conversely, WPAFB significantly impacts local economies through its education, scientific research and development programs, and regional operations. This economic impact is felt as direct payroll spending, personal spending in the community, development, and construction contracts. The integrated nature of WPAFB in the surrounding counties and its built-up urban environment necessitate a collaborative and communicative relationship between the local community and the installation.

Counties

Ohio is divided into 88 counties, each governed by an elected board of commissioners. The commissioners are responsible for setting policies, managing finances, and overseeing county operations. Three counties within the Project Area participated in developing the WPAFB CUP.

Clark County



Year Established

1818

Population

136,001
(U.S. Census
Bureau 2020)

Area

402.5 sq. mi.
397.5 sq. mi. of land
5.1 sq. mi. of water

Clark County is situated in central western Ohio. The County is east of WPAFB and is named after General George Rogers Clark, a hero of the American Revolution.

Cities	Townships	Villages
<ul style="list-style-type: none"> ■ New Carlisle ■ Springfield (county seat) 	<ul style="list-style-type: none"> ■ Bethel ■ German ■ Green ■ Harmony ■ Mad River 	<ul style="list-style-type: none"> ■ Madison ■ Moorefield ■ Pike ■ Pleasant ■ Springfield
		<ul style="list-style-type: none"> ■ Catawba ■ Donnelsville ■ Enon ■ North Hampton ■ South Charleston ■ South Vienna ■ Tremont City

The County encompasses two cities, 10 townships, and eight villages. Clark County was primarily rural land focused on agriculture and ancillary businesses until it gained a foothold in magazine printing and rosebush sales in the 1930s and 1940s. The population saw continued growth for over 70 years until it began experiencing a steady decline over the past decade. Springfield, the county seat, is known as the “City of Roses” because of its history in horticulture.

Clark County has several notable attractions and landmarks, including the Clark County Fairgrounds, the Springfield Museum of Art, the Westcott House (designed by Frank Lloyd Wright), and the Heritage Center of Clark County. The County is also known for its parks and outdoor recreational opportunities, including Buck Creek State Park, which features a large lake for fishing and boating, and the Little Miami Scenic Trail, which is popular for hiking and biking.

The economy of Clark County is diverse and includes a mix of manufacturing, agriculture, healthcare, and education. Major employers in the County include Springfield Regional Medical Center, Navistar, and Wittenberg University. Springfield is also home to the 178th Fighter Wing, an Air National Guard unit.

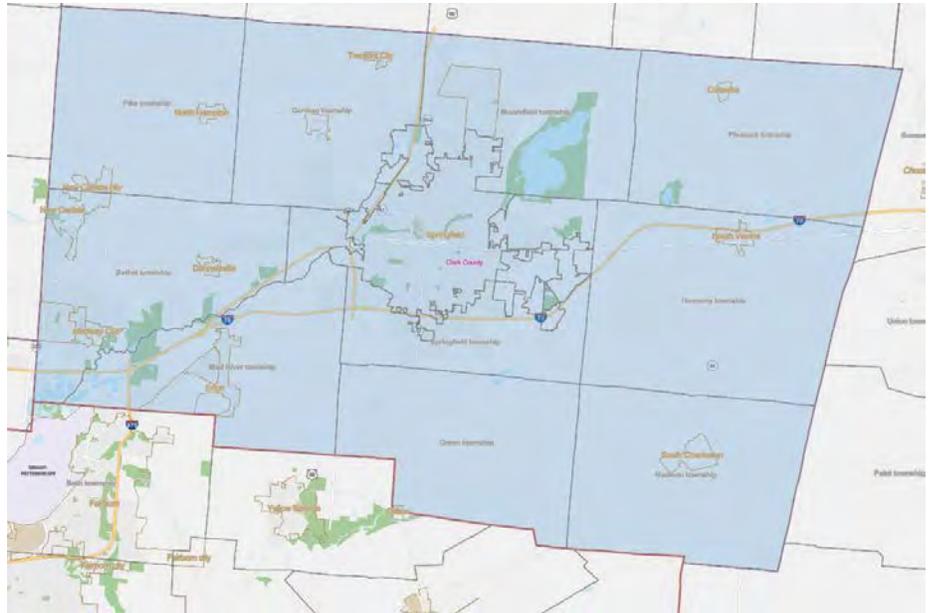
In recent years, the County has seen growth in the commuter population, where an increasing number of county residents choose to work in nearby urban areas but prefer to live in more rural areas. Overall, Clark County is a vibrant community with a rich history and various attractions and opportunities for residents and visitors alike.

Clark County’s 2018 Comprehensive Plan establishes goals to guide the County’s development over the next 10 to 20 years. The goals of the Plan are divided into four categories:

■ **Economic Development:**

The goal is to foster a diverse and sustainable local economy that creates good-paying jobs and supports the growth of existing businesses while attracting new investment.

■ **Quality of Life:** The goal is to improve the quality of life for residents by creating safe, healthy, and attractive communities that provide a range of housing options and access to quality education, healthcare, and recreational opportunities.



■ **Infrastructure:** The goal is to ensure that the County's infrastructure supports economic growth and community needs, including transportation, utilities, and broadband access.

■ **Environment:** The goal is to protect and preserve the County's natural resources, including farmland, forests, and waterways, by promoting responsible development, conservation, and sustainable land use.

To achieve these goals, the Plan includes specific objectives, strategies, and action steps, such as promoting the development of mixed-use areas, enhancing public transportation, improving water quality, and investing in workforce development programs. The Plan also involves ongoing engagement and collaboration with stakeholders, including residents, business owners, and community organizations, to ensure that it reflects the community's needs and aspirations.

These 2018 Comprehensive Plan goals are loosely echoed in the latest Clark County Strategic Plan 2021-2025, where the priorities include:

- Strengthening Clark County's economy and sales tax base,
- Retaining and attracting workforce, and
- Improving digital and physical access to government.

Greene County



Year Established	Population	Area
1803	167,966 (U.S. Census Bureau 2020)	416 sq. mi. 414 sq. mi. of land 2.5 sq. mi. of water

Greene County is in southwest Ohio. The County is east of WPAFB and is named after General Nathanael Greene, an officer in the Revolutionary War.

Cities	Townships	Villages
<ul style="list-style-type: none"> ■ Beavercreek ■ Bellbrook ■ Centerville (partial) ■ Dayton (partial) ■ Fairborn ■ Kettering (partial) ■ Xenia (county seat) 	<ul style="list-style-type: none"> ■ Bath ■ Beavercreek ■ Caesarscreek ■ Cedarville ■ Jefferson ■ Miami ■ New Jasper 	<ul style="list-style-type: none"> ■ Ross ■ Silvercreek ■ Spring Creek ■ Spring Valley ■ Sugarcreek ■ Xenia
		<ul style="list-style-type: none"> ■ Bowersville ■ Cedarville ■ Clifton (partial) ■ Jamestown ■ Spring Valley ■ Yellow Springs

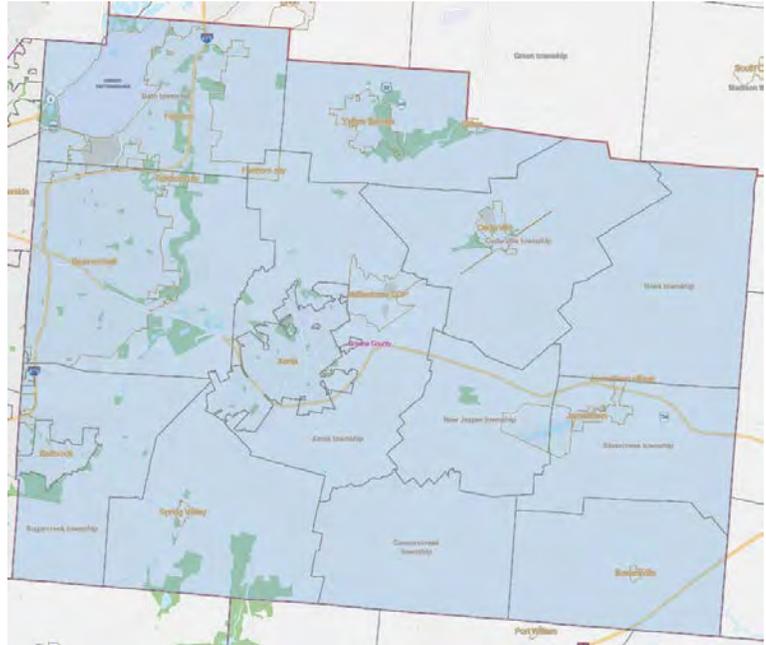
The County encompasses seven cities, 13 townships, and six villages. Greene County is primarily suburban, where the denser populations are found near the major cities and around WPAFB, located in the county's western portion. The heaviest populations were found in Xenia, Beavercreek, and Fairborn.

Greene County has several notable attractions and landmarks, including the National Museum of the United States Air Force. Greene County Parks and Trails manages over 3,000 acres of parkland and over 100 miles of trails – 62 miles of paved multiuse trails, 36 miles of river trails, and 24 miles of hiking trails – as well as camping, fishing, and other outdoor activities. Popular parks in the County include Caesar Creek State Park, which features a 3,700-acre lake, and John Bryan State Park, which offers hiking trails, camping, and scenic views of the Little Miami River.

The County is also home to various cultural activities, including the Greene County Fair, which showcases local agriculture and features live music and other entertainment, as well as exhibits and programs focused on the visual arts organized by the Dayton Art Institute.

The economy of Greene County is diverse and includes a mix of manufacturing, healthcare, education, and technology. Major employers in the county, include WPAFB, Kettering Health Network, and Wright State University.

The Greene County future land use plan, Perspectives 2040, established six future land use goals and eight “character zones” to guide the county’s growth and development over the long term. The key goals and objectives of the plan include:



- **Protect Farmland** — Protecting farmland from development and encroachment on agricultural activities is critical in the future land use plan.
- **Preserve Natural Resources** — Preserving the County’s natural resources was identified as a high priority through the input received during the development of Perspectives 2040.
- **Revitalize Existing Communities** — Investing in existing communities is intrinsically linked to multiple plan priorities.
- **Focus on Strategically Balanced Land Development** — Thoughtful and strategic development is at the heart of the Perspective 2040 plan. By developing in this way, many of the plan’s goals can be achieved.
- **Expand and Diversify the Local Economy** — A robust economy is essential to creating thriving communities.
- **Enhance Quality of Life** — Desirable places and spaces contribute to the quality of life experienced by the County’s residents, and enhancing the County’s abundant assets will further this goal.

These goals and future land use decisions are implemented through character zones. These future land use designations reflect the desired characteristics of each area and provide a countywide vision for where development, redevelopment, and preservation should occur. The eight character zones in Greene County are:

- | | | | |
|--------------------------|------------------------------------|--------------------|------------------------|
| ■ Agriculture | ■ Commercial and Employment Center | ■ Community Center | ■ Institutional Campus |
| ■ Natural and Open Space | ■ Rural Living | ■ Suburban Living | ■ Urban Living |

Montgomery County



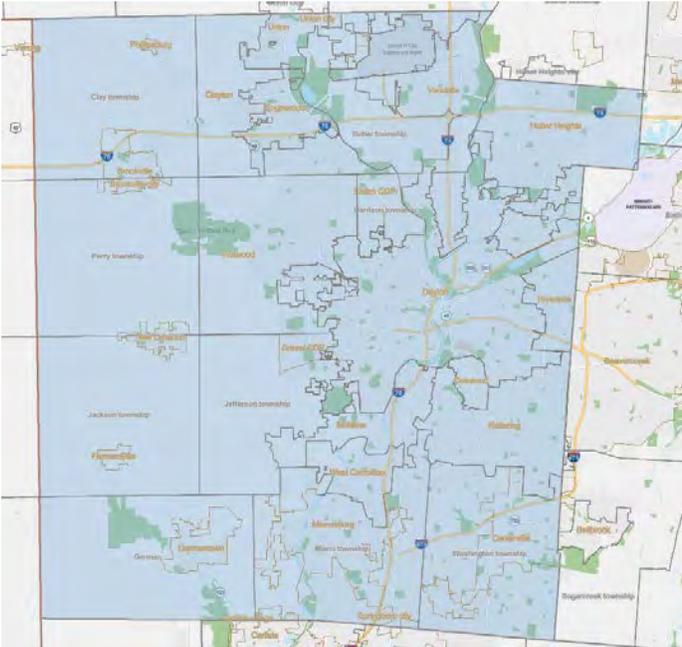
Year Established	Population	Area
1803	537,309 (U.S. Census Bureau 2020)	461.4 sq. mi. 461.4 sq. mi. of land N/A mi. of water

Montgomery County is in southwest Ohio. The County is west of WPAFB and named in honor of Richard Montgomery, an American Revolutionary War general killed in 1775 while attempting to capture Quebec City, Canada.

Cities	Townships	Villages
<ul style="list-style-type: none"> ■ Brookville ■ Centerville ■ Clayton ■ Dayton (county seat) ■ Englewood ■ Germantown ■ Huber Heights (partial) ■ Kettering 	<ul style="list-style-type: none"> ■ Miamisburg ■ Moraine ■ Oakwood ■ Riverside ■ Trotwood ■ Union ■ Vandalia ■ West Carrollton 	<ul style="list-style-type: none"> ■ Butler ■ Clay ■ German ■ Harrison ■ Jackson ■ Jefferson ■ Miami ■ Perry ■ Washington

The County encompasses 16 cities, nine townships, and three villages. It is known for its rich history and strong connection to aviation. Montgomery County's history dates to the early 19th century. It was an important center of innovation during the Industrial Revolution and played a key role in the development of aviation technology. Notable figures from the County's history include the Wright brothers, who developed the first successful airplane, and Paul Laurence Dunbar, a renowned African American poet and writer.

In addition to aviation and education, the County's economy is driven by various industries, including healthcare, manufacturing, logistics, and information technology. Major employers include Premier Health, WPAFB, and Dayton Children's Hospital.



Montgomery County has a diverse population spread throughout urban, suburban, and rural areas. The county government provides a range of services to residents, including public safety, healthcare, and environmental protection. The Dayton Art Institute, Victoria Theatre, the National Museum of the U.S. Air Force and the Dayton Aviation Heritage National Historical Park are a few cultural attractions visitors can explore in the County. Montgomery County offers diverse recreational and water activities for everyone throughout the year.

The County is also home to several parks and nature preserves, providing opportunities for outdoor recreation. Montgomery County has many parks and trails for hiking and biking, including the Great Miami Riverway, which has almost 100 miles of scenic views,

historical landmarks, and recreation areas along the Great Miami River. In addition, the County has several lakes and reservoirs, such as Eastwood Lake and Germantown Dam, where visitors can enjoy boating, fishing, and swimming.

The 2012 Montgomery County Comprehensive Plan goals aim to guide the County’s development over the next 10 to 20 years. The goals of the Plan are divided into five categories:

- **Economic Development:** The goal is to promote economic growth and development by fostering a business-friendly environment, supporting workforce development, and attracting new investment.
- **Housing and Neighborhoods:** The goal is to create vibrant, safe, and affordable neighborhoods that provide a range of housing options for residents, including seniors, low-income families, and people with disabilities.
- **Transportation and Infrastructure:** The goal is to provide safe, efficient, and sustainable transportation options, including public transit, bike lanes, and pedestrian-friendly streets, and to invest in critical infrastructure, such as water and sewer systems.
- **Health and Human Services:** The goal is to improve access to healthcare and social services, such as mental health care, addiction treatment, and job training to support the health and well-being of residents.
- **Environment and Sustainability:** The goal is to protect and enhance the County’s natural resources, including air and water quality, green spaces, and farmland, and to promote sustainable land use and energy conservation.

The Plan includes specific objectives, strategies, and action steps to achieve these goals, such as promoting mixed-use development, expanding public transit, improving access to affordable housing, and investing in renewable energy. The Plan also involves ongoing engagement and collaboration with stakeholders, including residents, business owners, and community organizations, to ensure that it reflects the needs and aspirations of the community.

Townships

Ohio townships are a form of local government that predates the state government. In Ohio, 1,308 townships provide a range of services to their residents. Each township is governed by a board of trustees, typically consisting of three elected officials who serve four-year terms. The trustees are responsible for setting policies, managing finances, and overseeing the township's operations. In addition to the board of trustees, Ohio townships may have a fiscal officer responsible for managing the township's finances and keeping records.

Ohio townships are funded through property taxes and may receive additional revenue from state and federal sources. They are responsible for various services, including police and fire protection, waste disposal, zoning, and cemetery management. They may also provide additional services such as parks and recreation programs, senior services, and community events.

Overall, Ohio townships play an important role in providing local government services to their communities and ensuring that residents can access the resources they need to thrive.

Bath Township | Greene County



Year Established

1807

Population

4,419 (U.S. Census Bureau 2020)

Area

37.8 sq. mi.

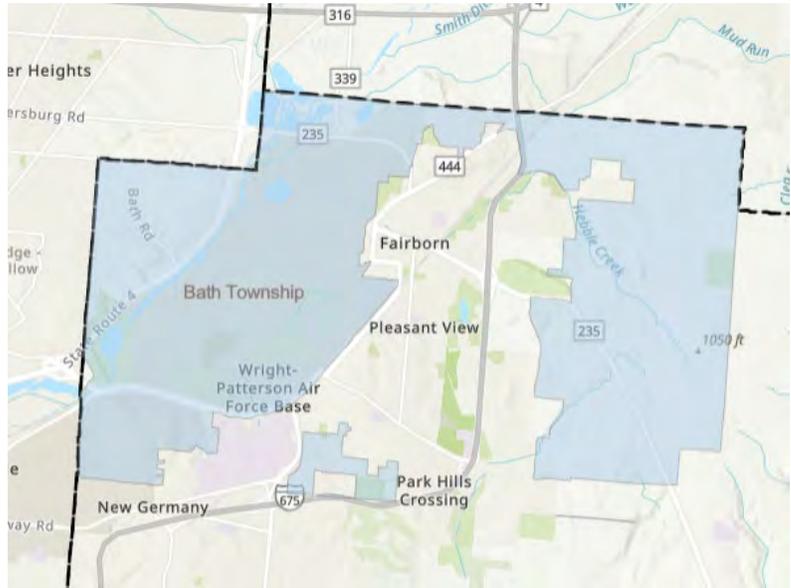
Bath Township includes the City of Fairborn and is east of WPAFB. The majority of WPAFB is located within Bath Township.

Bath Township is one of the 12 townships in Greene County. Organized in 1807, the Township was named after Bath, Maine, as one of the early settlers came from that City. Other early settlers were members of the Mercer family, who arrived from Virginia. The Mercer Log House is on the National Register of Historic Places.

In the 2011 Comprehensive Plan, Bath Township identified 10 primary goals:

- Continue the pattern of rural, single-family character
- Protect natural resources, including water resources, floodplains, riparian corridors, wetlands, soils, slopes, and tree canopies

- Create a connected system of open spaces, greenways, and trails
- Preserve and enhance hamlets with increased accessibility and walkability
- Create high-quality corridors along SR-18 and Cleveland-Massillon Road
- Sustain residential neighborhood values
- Sustain business vitality, with a particular focus on recommended business uses that align with the Township’s sense of place
- Provide public facilities that reinforce overall growth management goals with respect to fiscal responsibility and adequate service levels
- Foster multi-jurisdiction cooperative planning with adjacent and relevant jurisdictions and agencies to ensure complementary zoning
- Serve as a role model for sustainability by integrating sustainable practices within its own operations and by actively supporting, educating, and inspiring sustainable development throughout the community



Bethel Township | Clark County



Year Established	Population	Area
1807	18,050 (U.S. Census Bureau 2020)	34.6 sq. mi.

Bethel Township is in the southwestern corner of Clark County and sits north of WPAFB.

Bethel Township was initially inhabited by the Shawnee tribe of Native Americans, later displaced by European settlers.

Bethel Township was established in 1807 and named after Bethel, Connecticut, the birthplace of many of its earliest settlers. The first settlers in the area were farmers who cleared the land and established farms. They were followed by merchants and tradespeople who set up businesses to serve the growing community’s needs.

In the mid-19th century, the Township became an important center for broomcorn production, used to make brooms. The industry thrived for many years, and at its peak, Bethel Township produced over 75% of the world’s broomcorn.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

During the Civil War, Bethel Township played an important role in the Underground Railroad, a network of secret routes and safe houses used by African American slaves to escape to freedom in the North. Many of the Township's residents were abolitionists who helped hide and transport escaped slaves.

In the 20th century, the Township continued to grow and develop. It became a popular destination for tourists and vacationers, with several resorts and recreational areas within its borders. Bethel Township is a thriving community with residential, commercial, and agricultural properties today.

Some notable landmarks in Bethel Township include the Bethel Township Community Center, the New Carlisle Public Library, and the New Carlisle Fire Department. The Township has several parks and natural areas, including the George Rogers Clark Park and the Donnels Creek Wildlife Area.



Bethel Township | Miami County



Year Established

1807

Population

4,758 (U.S. Census Bureau 2020)

Area

34.8 sq. mi.

Bethel Township is in the southeast corner of Miami County and north of WPAFB.



Bethel Township, Miami County, sits west of Clark County's Bethel Township. Like its neighbor, the area was initially inhabited by Native American tribes, primarily the Shawnee, before European settlement. In the late 1700s, settlers began to arrive in the area and establish farms. The Township grew and prospered, with agriculture and milling becoming dominant industries. During the Civil War, Bethel Township was a center of Underground Railroad activity. Many residents were abolitionists who helped escaped slaves on their journey to freedom in the North.

In the late 1800s and early 1900s, the Township experienced growth and development. The Miami and Erie Canal, which passes through the Township, helped facilitate trade and commerce. The Township also established new businesses and industries, including a creamery, a tile factory, and a sawmill.

Bethel Township is a rural community with a mix of residential, commercial, and agricultural properties. It has several parks and natural areas, including the Waco Wildlife Area, which offers hunting, fishing, and hiking opportunities. Notable landmarks in Bethel Township include the Miami East Local Schools, the Bethel Township Fire Department, and the Bethel Township Community Center.

Beavercreek Township | Greene County



**BEAVERCREEK
TOWNSHIP**

Year Established

1803

Population

8,345 (U.S. Census Bureau 2020)

Area

49.4 sq. mi.

Beavercreek Township is in eastern Green County and west of WPAFB.

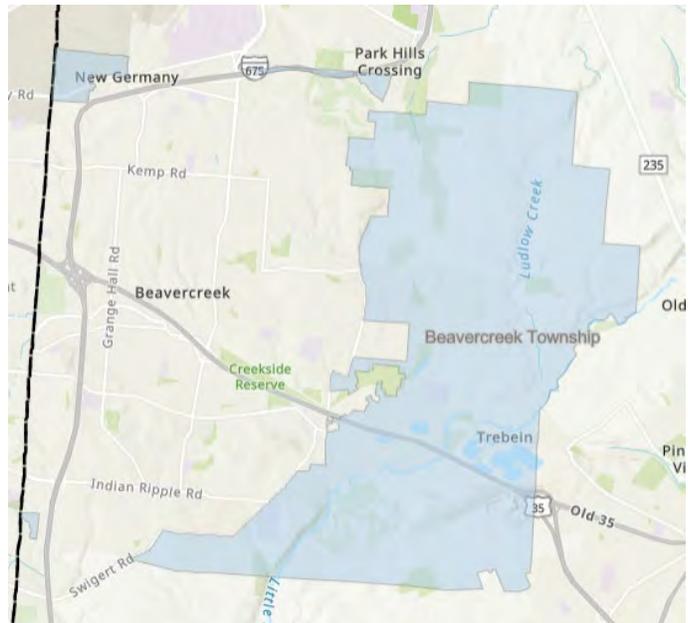
Beavercreek Township encompasses several populated places, most notably the City of Beavercreek and a portion of Fairborn to the north.

Beavercreek is one of the 12 townships in Green County. It was established in 1803; it was initially a fertile farming valley that has transitioned into more of a suburban residential area.

Beavercreek Township is known for its beautiful natural scenery. It has several parks and outdoor recreation areas, including the popular Indian Ripple Park, which offers hiking trails, picnic areas, and playgrounds.

The Township also has various businesses, including retail stores, restaurants, and manufacturing facilities. Beavercreek focuses on infrastructure upgrades, including developing a major arterial street along US-35 that is high-capacity.

Overall, Beavercreek Township is a growing community that offers its residents a high quality of life, access to outdoor recreation, a strong economy, and excellent schools.



Mad River Township | Clark County

Year Established

1807

Population

8,535 (U.S. Census Bureau 2020)

Area

33.9 sq. mi.

Mad River Township is in the southwestern corner of Clark County and north of WPAFB.

Mad River Township, one of the ten Clark County townships, occupies the northeast part of the project area. Its name derives from its adjacency to the Mad River on the west side, with the river forming its northern boundary. The Township is largely rural. The north area shares a border with the City of Springfield, and the southwestern area shares a border with WPAFB and Miami and Bath Townships.



Cities

Five major stand-alone cities near WPAFB were critical in developing the CUP: Dayton, Huber Heights, Beavercreek, Riverside, and Fairborn. They are described below.

Dayton | Montgomery County and Greene County



Year Established

1796

Population

137,644 (U.S. Census Bureau 2020)

Area

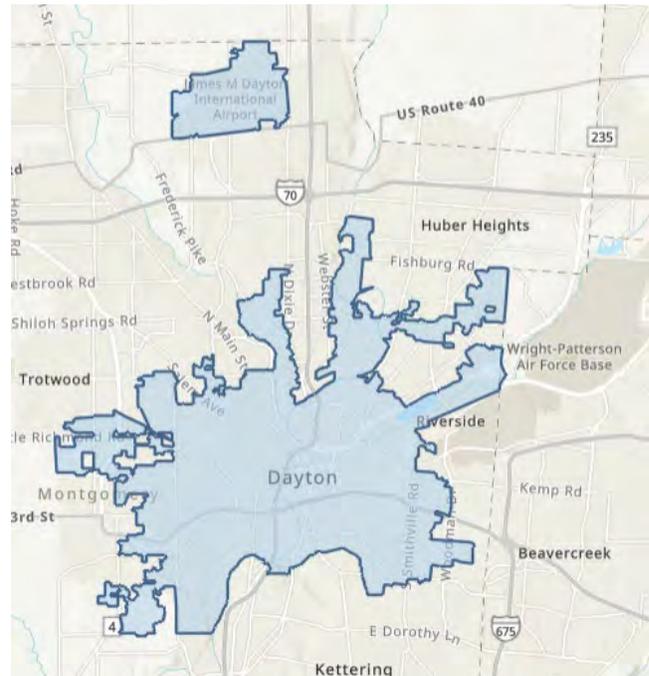
56 sq. mi.

Dayton is the sixth-largest city in Ohio and the major metropolitan area southwest of WPAFB. Most of the

City falls under the jurisdiction of Montgomery County. Dayton has historically been a marketing and shipping center. Economic development peaked in the mid-20th century, spurred by manufacturing, technological innovation, and the dawn of aviation.

It is home to 27 higher education institutions.

Dayton’s planning department has created several documents to guide the City’s future development, including the *2010 Greater Downtown Dayton Strategic Plan*, the *2020 Strategy for a Sustainable Dayton*, and the *2022-2026 Dayton Region Economic Development Strategy* in partnership with the Dayton Development Coalition and the Miami Valley Regional Planning Commission.



The **2010 Greater Downtown Dayton Strategic Plan** encompasses the Central Business District, situated on a river corridor and growing into an aerospace hub. The Plan identified goals for economic development, vibrancy, and public space and infrastructure, where the goals include retaining jobs and growing the workforce to 50,000; creating an urban neighborhood with 18-hour-a-day street activity by developing 2,500 new housing units in 10 years; and positioning the greater downtown as a center that builds upon the unique qualities of the urban place.

The **2020 Strategy for a Sustainable Dayton Plan** implementation involved creating a public/private oversight committee to oversee progress, report to the community, and champion the vision, where the strategy was built on a framework of equity, climate mitigation, infrastructure, resiliency, and economic development. This framework was applied to nine focus area projects, which included ground and surface water, air pollution, renewable energy, climate change adaptation, solid waste management, land use and community gardens, transportation, financial, and environmental awareness projects, which were monitored and managed by the Dayton Sustainability Office.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

In 2022, the five-year 2022-2026 Dayton Region Economic Development Strategy was published, and according to this strategy, it was determined that the primary industry services in Dayton are the federal government, business, insurance, aerospace vehicles and defense, and automotive manufacturing.

The strategy also determined that the growing industries in the region include logistics and distribution, biosciences and biotechnology, cyber technology and digital engineering, advanced air mobility, energy production, and alternative energy.

Huber Heights | Montgomery and Miami County



Year Established

1981

Population

43,439 (U.S. Census Bureau 2020)

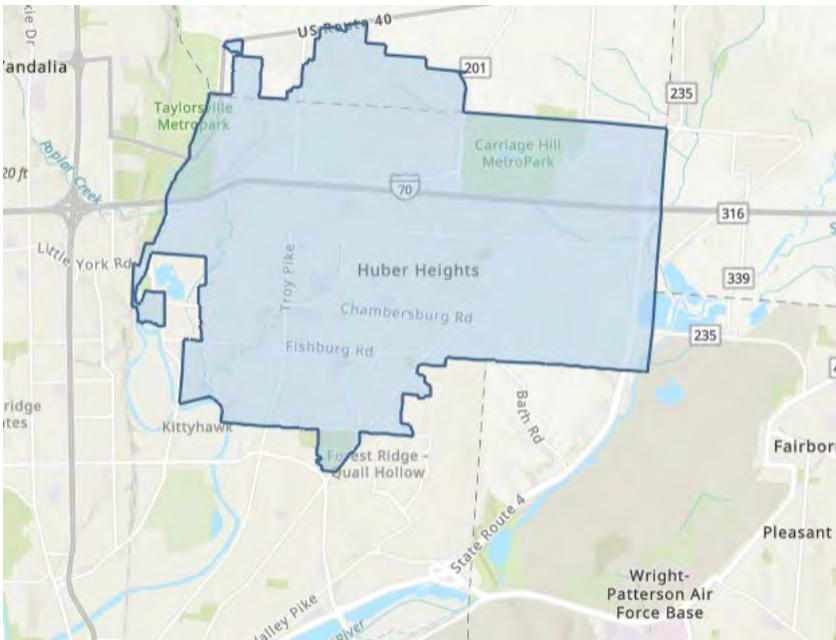
Area

22 sq. mi.

Huber Heights is primarily a residential community with several neighborhoods and housing developments scattered throughout the city. It is known for its strong sense of community and commitment to providing excellent services and amenities for residents.

The city features several parks and outdoor recreation areas, including the Carriage Hill MetroPark, located on the City's northwestern edge. The park offers hiking trails, fishing, and a working historical farm.

Formerly Wayne Township, Huber Heights was incorporated as a city in 1981. The city is the third largest and one of the fastest-growing suburbs in the Dayton Metropolitan Area.



The **2011 Comprehensive Plan** defines goals in marketing, economic development, redevelopment/reinvestment, community character, fiscal balance, coordination/cooperation and connectivity, quality of life, and quality of public services. The Plan also identifies "character action areas" that set priorities for development initiatives, which include gateways and corridors, preservation and protection, growth and enhancement, reinvestment and enhancement, and extra-jurisdictional areas.

Beavercreek | Greene County



Beavercreek

Year Established

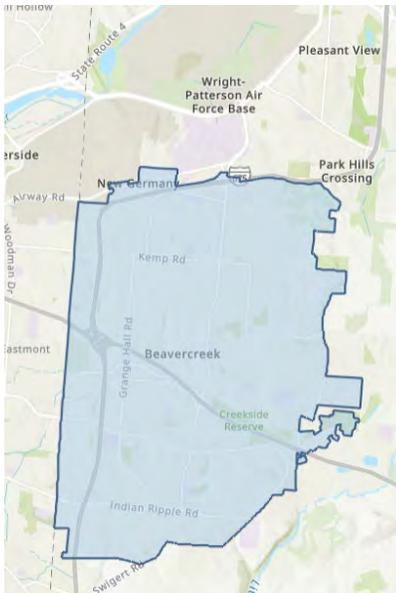
1980

Population

46,549 (U.S. Census Bureau 2020)

Area

26.63 sq. mi.



WPAFB and Wright State University are located northwest of Beavercreek. The City of Fairborn neighbors Beavercreek to the north, the Cities of Kettering and Riverside border it to the west, and the Beavercreek and Sugarcreek Townships border it to the east and south.

The area was first settled in the early 1800s as the Dayton region grew, but the city was not officially incorporated until 1980. It is home to several large research and manufacturing firms and commerce centers, where numerous defense industry contractors and/or Air Force civilian employees reside since Beavercreek is considered one of the more desirable places to live due to great schools and the livability of the region, which hosts two major commerce centers: the Mall at Fairfield Commons and Greene Town Center.

In 2015, the city published its land use plan, and in 2020, it published the land use maps. The city has four broad categories to encompass specific types of use and varying intensity of land use.

- **Open Space - Public Use:** Open Space includes public land, public parks, public recreation sites, environmentally critical areas such as floodways, passive open space designed to control and direct growth, and property owned and used by the City of Beavercreek or other governmental entities.
- **Residential:**
 - High Density — less than 9.51 dwelling units per acre
 - Low Density — less than 3.01 dwelling units per acre
 - Medium Density — more than 3.01 and less than 6.01 dwelling units per acre
 - Residential Offices — A mixture of residential uses and small-scale office and professional service establishments act as a transition between established residential neighborhoods and nonresidential uses.
- **Commercial:**
 - Community Commercial — Community Commercial is geared toward a market the size of the entire City and provides a broader range of merchandise and comparative shopping opportunities, in addition to convenience-type retail and service establishments that are usually found in Neighborhood Commercial-Office developments.
 - Mixed Use — These developments feature a full range and variety of commercial, office, and residential activity aspects that provide adequate and suitable space for mixed-density residential, developed with accompanying commercial and office uses.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

- Neighborhood Commercial — Neighborhood Commercial developments are small projects containing uses intended to provide for the daily needs of nearby residents.
- Regional Commercial — Regional Commercial developments provide a full range and variety of all aspects of commercial activity, oriented around one or more major department stores.
- **Research and Development, Office, Light Industrial - High Tech Manufacturing:** Collectively, these uses lend themselves toward the design of research and business park employment centers. This type of development requires public utilities, such as three-phase electric power, gas, water supply, and wastewater disposal. The availability and capacity of such utilities are major factors in the attractiveness of developed properties within this land use category.

Riverside | Montgomery County



City of
Riverside
Pride • Progress • Possibilities

Year Established
1995

Population

24,474 (U.S. Census Bureau 2020)

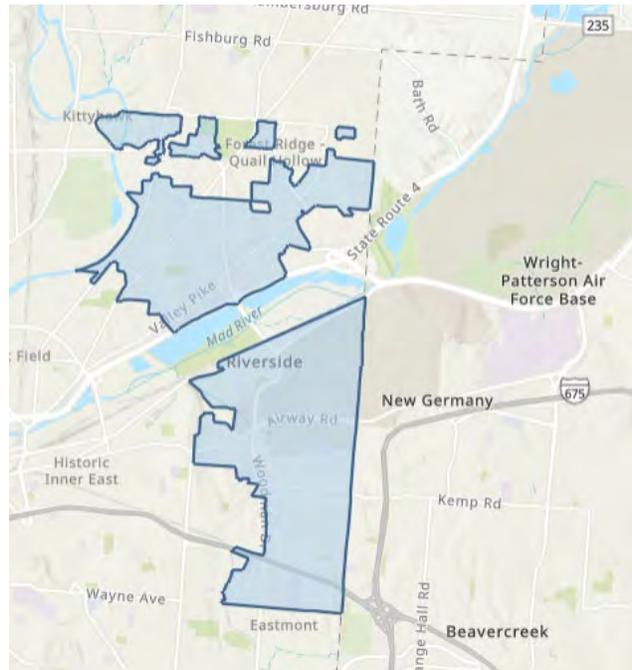
Area

9.8 sq. mi.

Located in Montgomery County, the City of Riverside is a suburban city bifurcated by the Mad River and Eastwood Lake, where the eastern reach of the city abuts WPAFB and the City of Beavercreek. The City of Riverside is the largest community south and west of the base perimeter.

In 1994, the City of Riverside merged with the surrounding Mad River Township, where it became established as a city in 1995. This merger resulted in several separate sections of the city in parts of the Township that the Cities of Dayton and Huber Heights and WPAFB annexed.

The City of Riverside updated the Comprehensive Plan in 2023 with key concepts summarized as “Place, Prosperity, and Foundations.” This replaced the previous Comprehensive Plan adopted in 2005 that focused on encouraging the enhancement of planned commercial areas and a central core district, strengthening older neighborhoods via infill and housing inventory development, and implementing initiatives for housing maintenance.



Fairborn | Greene County

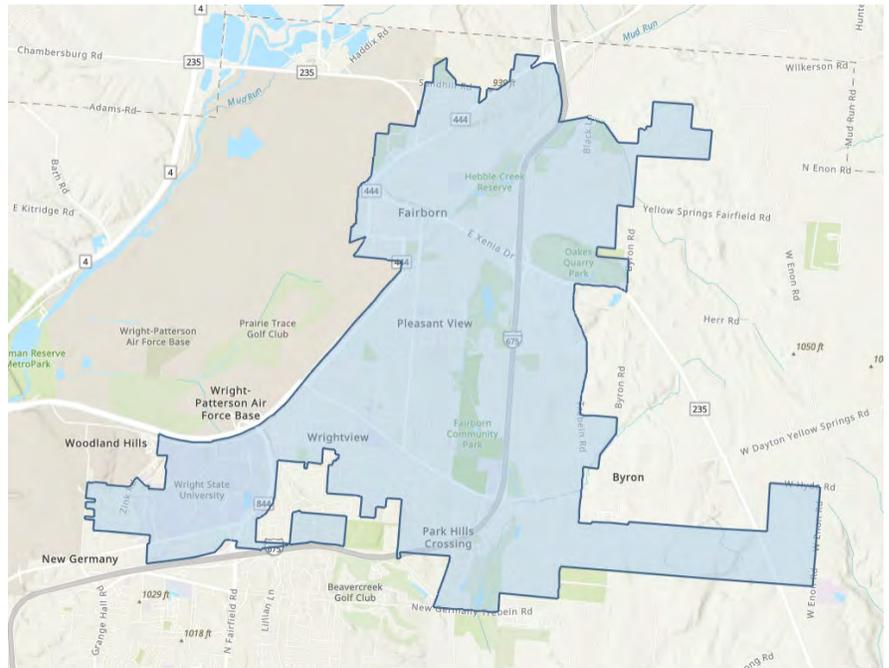


Year Established
1950

Population
34,510 (U.S. Census Bureau 2020)

Area
14.58 sq. mi.

The City of Fairborn is in Greene County. It was created after merging two older villages, Fairfield and Osborn. Once a small pioneer settlement, the City of Fairborn has seen many decades of development spreading from its origin on the corridor connecting Dayton and Springfield, now Broad St/SR-444. During the two decades immediately following the incorporation of Fairborn in 1950, The city grew by 600%. Its sudden growth was due to the development and economic impact of WPAFB, with Fairborn, who has created a symbiotic relationship and strong ties with Wright-Patterson.



The Comprehensive Land Use Plan was last updated in 2016 and established four districts:

- Central District
- Downtown District
- East District
- University District

These districts are based on development patterns and assist the evaluation process in land use planning. Proximity to one of the largest Air Force bases in the country positions the Downtown District for a high level of exposure to Air Force personnel and visitors. Additionally, in the heart of the Central District is Five Points, a commercial node with great potential to increase the density of uses and the tax base for the surrounding neighborhoods. Separating Fairborn and WPAFB is Kauffman Avenue, also located in the Central District.

The City of Fairborn published two documents to guide future development, which include the 2019-2023 and the 2020-2024 5-year Capital Improvement Plans (CIPs), and the Development Services Department was tasked with their implementation and management.



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

The 2019-2023 CIP defined four key areas of focus for future development:

- Enhancing business development activity and strengthening partnerships with local and state partners;
- Generating attention via marketing and public relations activities with special event promotion and cross-marketing properties to fill vacant space; increasing real estate development by implementing a property database and search tool for increased marketing and improving utilities;
- Creating a Fiber Network Master Plan; and
- Creating and/or altering internal programs and policies to allow the Development Services Department to drive new investment and create a more business-friendly environment.

The 2020-2024 CIP examined trends in service demand and growth and outlined several key economic impacts to influence the City's economic outlook. They include:

- Proximity to WPAFB and future growth;
- Proximity to Wright State University and the growth of education, and the abundance of buildable land with easy access to transportation infrastructure;
- The development potential due to the correlation of multiple transportation options available, such as an active rail corridor, the key interstate highways of I-675/I-70, and nearby airport access;
 - A new, more aggressive internal approach to economic development, and improving residential development throughout the city with increasing price points; and
 - Aggressive redevelopment and infrastructure efforts within the city's strategic corridors are designed to catalyze new development.

Additional Community Partners

WPAFB has been a key fixture in the regional economy for generations. Due to its unique nature as an innovation center, WPAFB has been integrated into the local and regional communities. Some of the prominent regional organizations and agencies are listed below:

Dayton Development Coalition



Year Established

1994

Primary Service Area

14 Counties

The Dayton Development Coalition (DDC) is a private, nonprofit organization seeking to bring economic development, jobs, and prosperity to the 14-county region surrounding Dayton and WPAFB. A 30-member board of economic leaders and community representatives governs the DDC. The DDC works to develop the economy of the Dayton region by working as a team with community partners and emphasizing a forward-looking economic development strategy that takes advantage of the abundant resources of the community. These efforts by the DDC and its partners have resulted in growth for the region’s largest employer, WPAFB, and the other participating cities, communities, townships, and villages that comprise the Dayton region.

Miami Valley Regional Planning Commission



Year Established

1964

Primary Service Area

Darke, Greene, Miami, Montgomery, Preble, Shelby & Northern Warren counties

Founded upon regional collaboration, cooperation, and consensus-building principles, the Miami Valley Regional Planning Commission (MVRPC) serves as the common ground where area partners work toward a shared vision across the region.

The MVRPC has served the planning needs of the Miami Valley in Southwest Ohio since 1964, serving the Region for more than 60 years. The MVRPC serves as the MPO for Montgomery, Miami, and Greene counties, plus a portion of Northern Warren County. Since June 2024, MVRPC has been the RTPO for Darke, Preble, and Shelby Counties. MVRPC also provides regional and environmental planning support to members in seven counties. MVRPC policies guide agency interactions in many areas, including implementing project funding, public participation in the planning process, public records retention and access, and non-discrimination.

Wright-Patterson AFB Joint Airport Zoning Board

Year Established

1975

Primary Service Area

Clarke, Greene, Miami & Montgomery Counties

The Zoning Code, which is in effect today, was updated in 1997.

The Joint Airport Zoning Board consists of 12 people duly qualified and seated as members of the Board of Commissioners of Clark, Greene, Miami, and Montgomery Counties (three from each). The Board elects a chairman and vice-chairman from its members; each serves for one year or until a successor is elected to take office.

For enforcement and administration of the Joint Airport Board's adopted Zoning Regulations, the administrative agency is the Chief Building Inspector for Montgomery County, also known as the Airport Zoning Inspector. Subject to approval of the Board, the Airport Zoning Inspector, with subsequent approval of the local jurisdiction, may appoint a Deputy Zoning Inspector from each participating government jurisdiction to issue permits within their respective jurisdiction.

Wright-Patterson Regional Council of Governments



Year Established

2022

Participating Governments

Cities of Dayton, Huber Heights, Fairborn, Beavercreek, and Bath and Riverside townships

The Wright-Patterson Regional Council of Governments (COG) coordinates the powers and duties of member communities, which include the Cities of Dayton, Huber Heights, Fairborn, and Beavercreek, and the Bath and Riverside Townships, to serve the regional community better and benefit the economic development and land use planning for the entire region and its primary entities. Ultimately, this supports growth and operations at WPAFB and the neighboring Springfield Air National Guard Base. The Wright-Patterson Regional COG has a 2030 Strategy with four success pillars: advocacy, outreach, partnerships, and industry.

Wright State University



Wright State University is a public research university that became independent in 1967.

It is named in honor of Orville and Wilbur Wright, aviation pioneers who were long-time Dayton residents. Much of the land the campus is built upon was donated by the United States Air Force. Today, Wright State educates almost 10,000 students on its Dayton campus and offers 315 undergraduate, graduate, doctoral, and professional programs through six colleges and one medical school. The Carnegie-classified research department partners with the National Institute of Health, the National Science Foundation, the United States Air Force Research Laboratory, the Defense Advanced Research Projects Agency, and the Office of Naval Research to research innovative science and technology.

4.2 Population Trends

Population trends help outline the regional context for growth projections and development within the CUP Project Area. These trends can be useful for various purposes, including urban planning, resource allocation, economic analysis, and policymaking. Additionally, year-over-year growth may highlight future compatibility concerns between military missions and surrounding communities. Understanding population trends can help accentuate future compatibility issues between WPAFB and the surrounding communities.

Identifying where population growth occurs is essential for planning future development for local and regional communities. Table 4-1 shows the change in population for the jurisdictions within the CUP Project Area from 2010 to 2020. U.S. Census decennial data were used for population counts. In general, the population in the region increased. Various potential drivers of migration within the area include job opportunities, educational choices, governmental policies, and housing availability.

Table 4-1 2010-2020 Regional Population Change

Jurisdiction	2010 Population	2020 Population	Percent Change
Bath Township	6,420	4,419	-31.2%
Beavercreek Township	5,762	8,345	44.8%
Bethel Township (Clark County)	18,505	18,050	-2.46%
Bethel Township (Miami County)	4,843	4,758	-1.76%
Mad River Township	11,145	10,984	-1.44%
City of Beavercreek	45,193	46,549	3.00%
City of Dayton	141,527	137,644	-2.74%
City of Fairborn	32,352	34,510	6.67%
City of Huber Heights	38,101	43,439	14.01%
City of Riverside	25,201	24,474	-2.88%
Enon Village	2,443	2,449	0.25%
Clark County	138,333	136,001	-1.69%
Greene County	161,573	167,966	3.96%
Montgomery County	535,153	537,309	0.40%

U.S. Census Bureau, 2010 and 2020

Population Projections

The 2022 Dayton Region Economic Development Strategy projects a decline in population for the 20-30 age group and the 50-65 age group over the next 10 years. The projected declines may impact the workforce in the greater 13-county region; however, caution is advised as the federal government recently has invested significantly in technology and infrastructure, which will likely stimulate or mitigate the projected out-migration of the aging population (50-65) and the recent graduate class (20-30). More locally, the population will likely remain stable within Clark, Greene, and Montgomery Counties due to greater economic opportunities and diverse employers.

4.3 Economic Trends and Growth Potential

Economic trends for the CUP Project Area can help identify growth potential and how that growth may directly relate to WPAFB. Economic trends include projected jobs in the area, median household income, the population currently in the workforce, and the top industries in the CUP Project Area.

Job Projections

The DDC states that between 2021 and 2025, the Dayton region is expected to see a 1.3% increase in population but a 1.8% increase in jobs. According to the U.S. Bureau of Labor Statistics, population is an important factor in determining the size and composition of the labor force, which is the number of people working or looking for work.

Communities nationwide face potential labor shortages as the workforce ages and birth rates drop. The region is finding ways to develop, attract, and retain talent and a strong workforce. Other priorities focus on infrastructure, vibrant communities, small businesses and entrepreneurship, and a resilient economy. Employment projections by the Ohio Bureau of Labor Market Information say that the number of jobs in West Ohio is expected to increase by 0.6% between 2018 and 2028. This area comprises 12 counties: Auglaize, Champaign, Clark, Clinton, Darke, Greene, Fayette, Mercer, Miami, Montgomery, Preble, and Shelby. Ohio has six [JobsOhio](#) regions in the state, and West Ohio's projected job growth exceeds all but Central Ohio's (5.2%) and Southwest Ohio's (2.5%).

Industries expected to receive the most robust growth in Western Ohio include:

- Healthcare and social assistance (10.5%);
- Construction (8.9%);
- Professional, technical, and legal services (7.4%); and
- Transportation and warehousing (7.1%).

Sectors expected to receive the largest employment losses include:

- State government (-8%),
- Retail (-4%),
- Information technology (-3.9%), and
- Manufacturing (-3.8%).

(Source: Dayton Daily News/Cornelius Frolik, January 18, 2022)

Since 2010, the Dayton region's unemployment rate has remained at or below the state average. The labor force participation rate, comprised of adults 16 or older working or actively seeking work, exceeds state and national trends.

In 2019, before COVID-19, the U.S., Ohio, and Dayton region unemployment rates were the lowest, they had been in over two decades, where the U.S. and Dayton region rates hovered around 3.5%, and the Ohio rate was just above 4.0%. In 2020, the unemployment rates for all three began a sharp and steady increase between 6.0% and 7.2% in just 12 months. This spike has already started to decrease, and as of September 2022, the unemployment rate for the U.S. was 3.5%; for Ohio, it was 4.0%; and for the Dayton region, it was 3.9%. (Source: Dayton Region Economic Development Strategy 2022-2026 and Bureau of Labor Statistics, September 2022)

Median Household Income

A good measurement of economic growth is the change in median household income for the communities within the CUP Project Area. All communities within the CUP Project Area substantially increased median household income from 2000 to 2020, with Dayton experiencing the lowest increase at 17.2% and the City of Huber Heights experiencing the largest increase at 25.6%. In 2010, the combined average median household income was \$45,700; in 2021, the median household income in Clark, Greene, and Montgomery Counties was \$65,057.

Current Population in the Workforce

Population growth in the Dayton region outpaces statewide trends. Since 2012, rural areas of the region have experienced a higher growth rate than urban areas. However, both are projected to see declining growth in the coming decade. In 2022, a trend indicating a declining population in the Dayton region's urban and regional areas began; declines of up to 2% are expected between now and 2030 in both areas. However, the overall population for the Dayton region from 2020 to 2030 is expected to grow approximately 3%, which will be higher than the State's growth, projected to be about 2% during that timeframe. Meanwhile, national population growth is projected to be approximately 8% during that period.

Strategic Priorities, Talent & Workforce Overview. An analysis of data demonstrates that job growth is outpacing population growth across the Dayton region. Upon closer examination of the data, it becomes apparent that over the next decade, the region is expected to undergo a notable decline in population, particularly within the 20-30 and 50-65 age brackets, encompassing both the early and late stages of the workforce. These data points, combined with stakeholder feedback in the Successes/Strengths/Opportunities/Aspirations/Risks (SSOAR) inventory summary and analysis, identified the primary risks to the regional economy as the ability to attract and retain talent and workforce diversity and readiness, which points to a need for a regional focus on the CUP Project Area.

The Labor Force Characteristics for the period of 2012 to 2021 for the Dayton region showed population growth was 2.5% versus job growth, which was 4.6%. In September 2021, the unemployment rate for the region was 4.2%; from 2008 to the present, the lowest unemployment rate was 3.7% in 2019, and the highest was 11.2% in 2009, with a 64% labor force participation rate. (Source: Labor Force Characteristics — Ohio Department of Job and Family Services)

Top Industries & Employers in the CUP Project Area

The projected job growth in the Dayton region and CUP Project Area is expected to remain within the major economic industries that exist today, which include military personnel and contractors, aerospace vehicles, and defense; health industry workers from administrative to professional; government employees supporting federal, state, county, and local governments; retail trade; professional, scientific; and general administrative and management services; as well as educational services, social assistance, and public administration.

Table 4-2 shows the major employers for the Dayton region and the number of employees.

Table 4-2 Major Employers in the Region

Large Employers in the CUP Project Area	Number of Employees
Dayton Children’s Hospital	3,341
Honda of America Manufacturing, Inc.	3,200
Kettering Health	12,419
Lexis Nexis Group	3,000
Montgomery County	4,284
Premier Health Partners	12,425
Sinclair College	3,163
University of Dayton	3,028
Crown Equipment Corporation	2,918
Wright-Patterson AFB	32,478

Dayton Region Economic Development Strategy 2022-2026

For the period from 2022 to 2026, the Dayton Region Economic Development Strategy — Talent & Workforce Strategies identifies efforts to:

- Encourage an integrated continuum of workforce preparation across the education and life stage spectrum,
- Align education and workforce development programs with industry needs and opportunities,
- Address structural barriers that inhibit workforce participation, and
- Promote the career opportunities available in the region.

4.4 Existing and Future Land Uses

Existing and future land uses within the CUP Project Area can be used to assess potential encroachments quickly. This section outlines the existing and future land uses planned for the communities surrounding and closest to WPAFB. Chapter 6: Compatibility Assessment further analyzes land use compatibility.

Existing Land Use Surrounding Wright-Patterson AFB

The existing land uses indicate the current use of the land as described in detail below for each community located within the CUP Project Area. WPAFB is located within the Dayton metropolitan area. It is surrounded on three of four sides (west, south, and east) by various types and densities of existing development. The remaining north side is mostly undeveloped or used for agricultural farmlands, with a few low-density residential lots and commercial and industrial parcels.

The more developed and/or built-out areas on the west, south, and east sides of the CUP Project Area surrounding WPAFB include the more highly urbanized cities of Huber Heights, Riverside, Dayton, Beavercreek, and Fairborn, as well as the western portion of Bath Township, which is located between the City of Riverside and WPAFB. The lesser-developed areas of the CUP Project Area include Beavercreek Township to the southeast; the eastern portion of Bath Township, located on the east side of the City of Fairborn; Enon Village and Mad River Township, which are both located to the northeast; and Bethel Township located in the northern and northwestern portions of the CUP Project Area.

The **City of Huber Heights** is in the northwestern portion of the CUP Project Area, and the existing land uses closest to WPAFB include mostly agricultural and conservation lands, with some very light, low-density residential uses closest to the base and fewer industrial uses more distant from the base.

The **City of Riverside** abuts the western edge of the western portion of Bath Township and is adjacent to the western edge of WPAFB. It is in the western portion of the CUP Project Area. The existing land uses for the City of Riverside, closest to WPAFB, includes low—to high-density residential areas and a large area of mixed commercial uses.

The **portion of Bath Township is located west of WPAFB**. Due to the base's proximity, the WPAFB Zoning Codes for this area are very restrictive regarding development. The existing land uses mostly comprise the Mad River, Lyre Lake, and numerous open water reservoirs and holding ponds, with a small amount of undeveloped open land and some minor agricultural uses.

The **City of Dayton** is in the southwestern portion of the CUP Project Area, and the existing land uses closest to WPAFB include open and undeveloped land zoned as Well Head Operation (WO) with light industrial uses and a low-density residential housing subdivision located farther south and away from the base, according to the official Zoning Map.

The **City of Beavercreek** and **Beavercreek Township** are in the southeastern portion of the CUP Project Area, with the City of Beavercreek closest to WPAFB. Beavercreek Township is located on the eastern side of the City of Beavercreek. The existing land uses closest to WPAFB include commercial uses, residential/commercial mixed uses, and agricultural uses, all located on the north and west sides of the I-675 Interstate Loop, and that land is currently

mostly undeveloped. On the east and south sides of the I-675 Interstate Loop, farther away from WPAFB, the existing land is zoned for residential planned unit developments, and it is mostly undeveloped for approximately one-half mile, with two low-density residential housing subdivisions located in that area.

The **City of Fairborn** is in the eastern portion of the CUP Project Area, where the City's western boundary abuts the east boundary of WPAFB. The City's western boundary runs the entire north-south length of the base, with a small portion of its jurisdiction running east and west along the southern boundary of the base. For the southern portion of the city located just below WPAFB, the existing land uses include most of this land being civic and institutional, where the Wright State University campus is located, with the remaining smaller percentage of land containing industrial and commercial planned development uses as well as professional office uses. Overall, development on this southern end is essentially built-out and has very low density. For the city's southern half, on the east side of the base, railroad tracks and SR-444 separate the city from the base. The existing land uses for this land closest to the base include an equal mix of medium- to low-density residential uses interspersed with a few commercial uses. This entire area is entirely built out. The land closest to the base in the city's northern half, located between SR-444 and the railroad tracks, is entirely built-out. About 50% of the existing land uses include medium- to low-density residential uses, with about 30% of the remaining land farther from the base to the north utilized as very low-density light industrial uses. The remaining 20% of the land farthest from the base is an almost equal mix of conservation land with civic, institutional, and commercial uses.

The **portion of Bath Township located in the eastern part of the CUP Project Area**, to the east and north of the City of Fairborn, primarily consists of land zoned for general manufacturing and rural districts. Most of this land remains undeveloped, with some agricultural uses. The area also features the Mad River, several open-water reservoirs, and holding ponds. Less than 5% of this land is developed or built upon.

Enon Village and **Mad River Township** are in the north, and northeastern portions of the CUP Project Area, where most of the existing land uses closest to WPAFB include undeveloped and agriculturally developed lands. A small percentage of the land closer to Enon Village comprises very low-density residential uses, with an even smaller percentage of commercial uses.

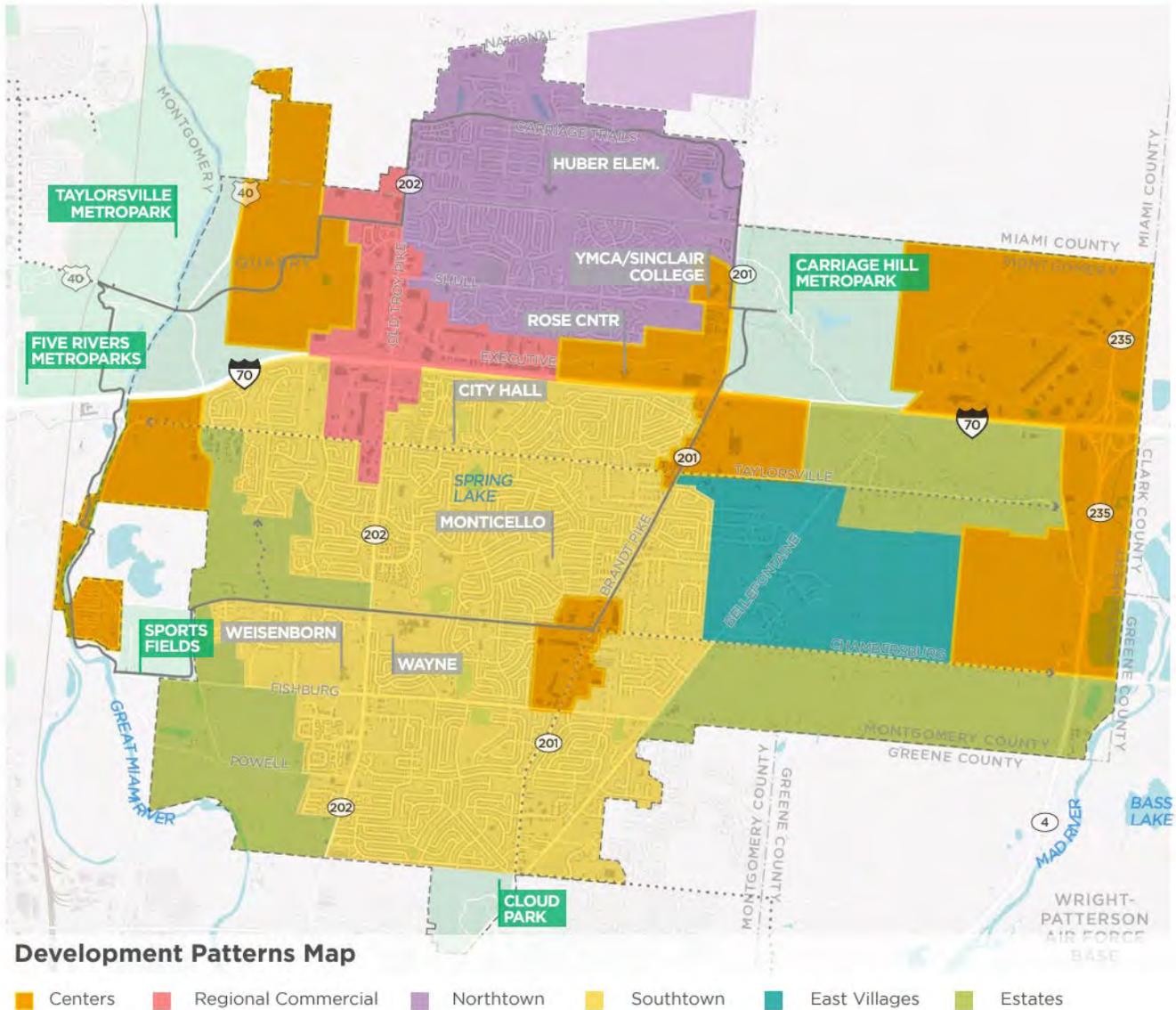
Bethel Township is in the northern and northwestern portions of the CUP Project Area. The land closest to WPAFB and south of I-70 is undevelopable mainly due to the large number of open water reservoirs and holding ponds. Still, the land that is developable in this area is in the southeast corner of the intersection of I-70 and SR-235. That area has essentially been built with a low-density residential housing subdivision. Otherwise, the land north of I-70 is mostly undeveloped or agriculturally developed, with a small percentage of that area containing some very low-density residential uses and an even smaller percentage of commercial uses.

Proposed Future Land Use Surrounding WPAFB

The proposed land uses for the areas surrounding WPAFB are described below and arranged by the community. Available future land use maps have been included.

City of Huber Heights (northwestern portion of the CUP Project Area): Its Comprehensive Plan and Future Land Use Map (FLUM), as shown in Figure 4-1, call for agricultural uses and conservation lands to be protected and preserved into the future, leaving little opportunity for future development in this area closest to the base.

Figure 4-1 City of Huber Heights Land Use

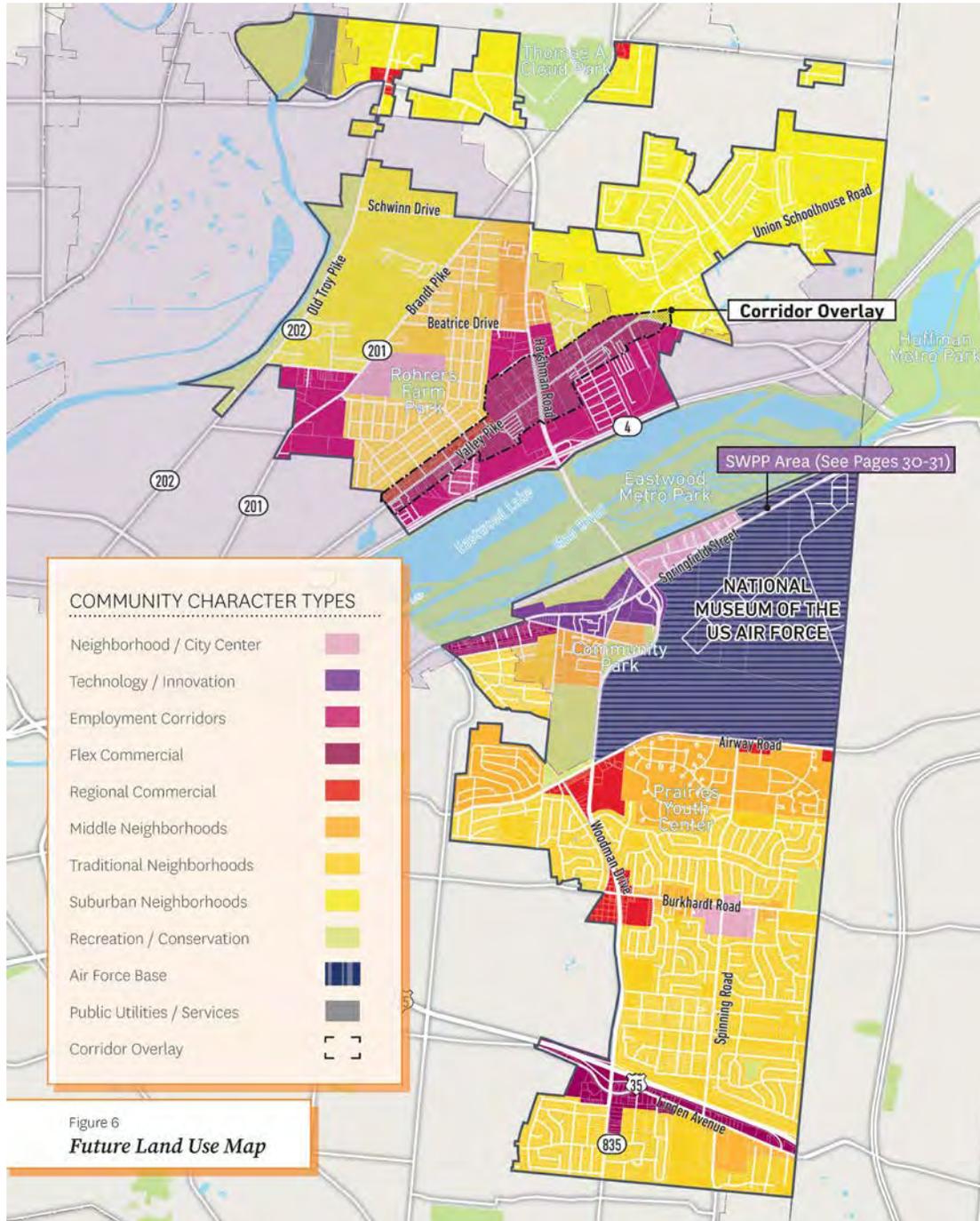


Source: City of Huber Heights Comprehensive Plan, 2011

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City of Riverside (western portion of the CUP Project Area): The FLUM shown in Figure 4-2 calls for more low- to high-density residential uses, with a large area of mixed commercial uses to be developed until the remaining land becomes built out.

Figure 4-2 City of Riverside Future Land Use

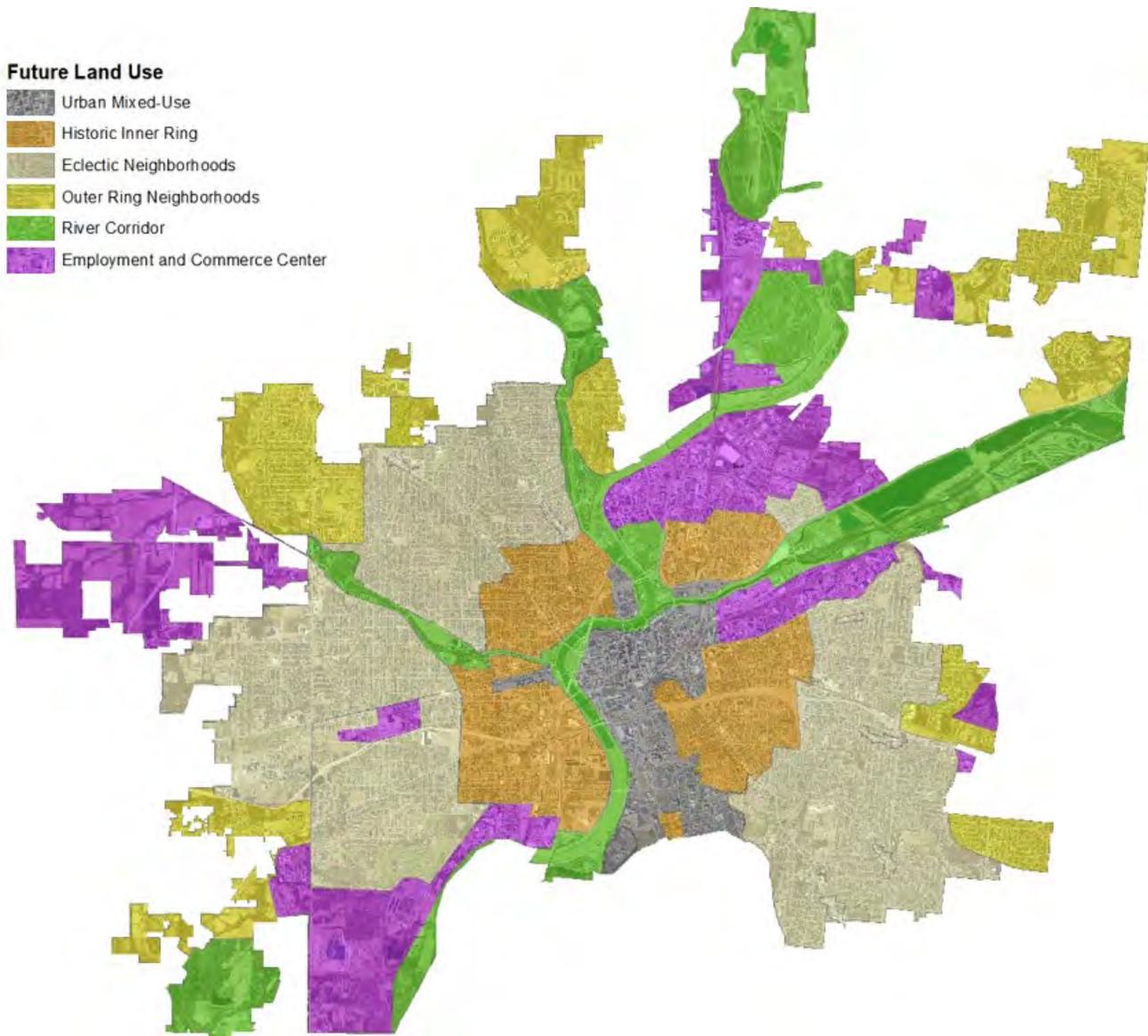


Source: City of Riverside Comprehensive Plan, 2023

The portion of **Bath Township located due west of WPAFB** (western portion of the CUP Project Area): The proposed future land uses for this area are essentially nonexistent due to the development restrictions placed upon it by the WPAFB Zoning Codes. This area also contains the Mad River, Lyre Lake, and numerous other open-water reservoirs and holding ponds, which make future development prohibitive.

City of Dayton (southwestern portion of the CUP Project Area): The proposed future land uses, as shown in Figure 4-3 includes the most available land zoned as WO on the official zoning map for the properties closest to WPAFB. This is a Source Water Protection Area (SWPA) where future land development is prohibitive due to the restrictions imposed by the Zoning Codes.

Figure 4-3 City of Dayton Future Land Use

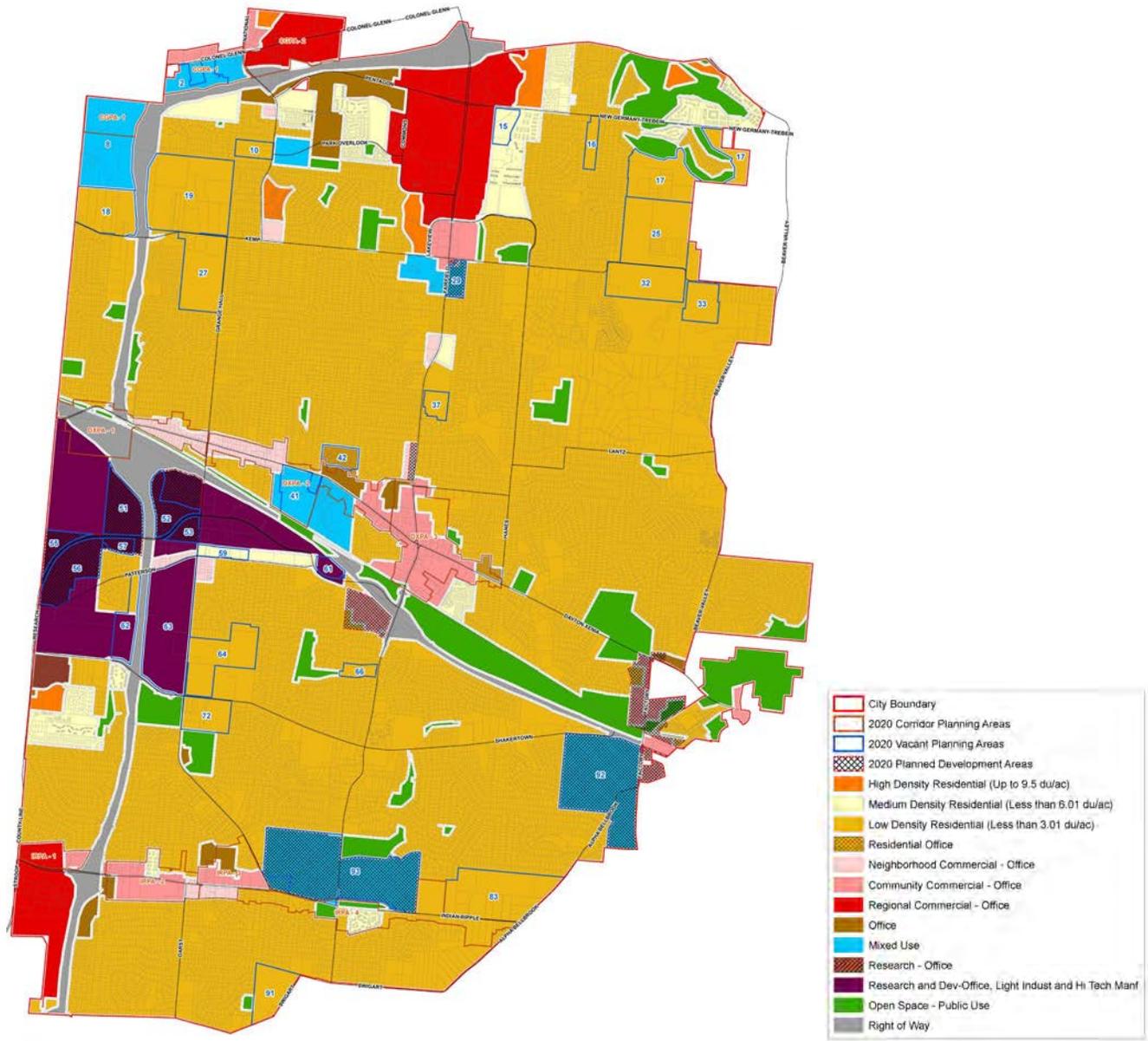


Source: City of Dayton Comprehensive Plan, 2022

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City of Beavercreek and **Beavercreek Township** (southeastern portion of the CUP Project Area): Essentially, all the land within a mile of WPAFB is zoned as commercial, mixed-use, or residential planned unit development, according to the Zoning Codes and official Zoning Map. This allows for greater development flexibility than standard Euclidean Zoning but requires that what gets built cannot deviate from the approved Development Plans and/or the enforceable Development Agreement. The proposed future land uses for this area, as shown in Figure 4-4, closest to the base are all commercial and mixed-use planned unit developments. Residential planned unit developments are permitted farther from the base, ensuring that what gets built closest to WPAFB can be better controlled.

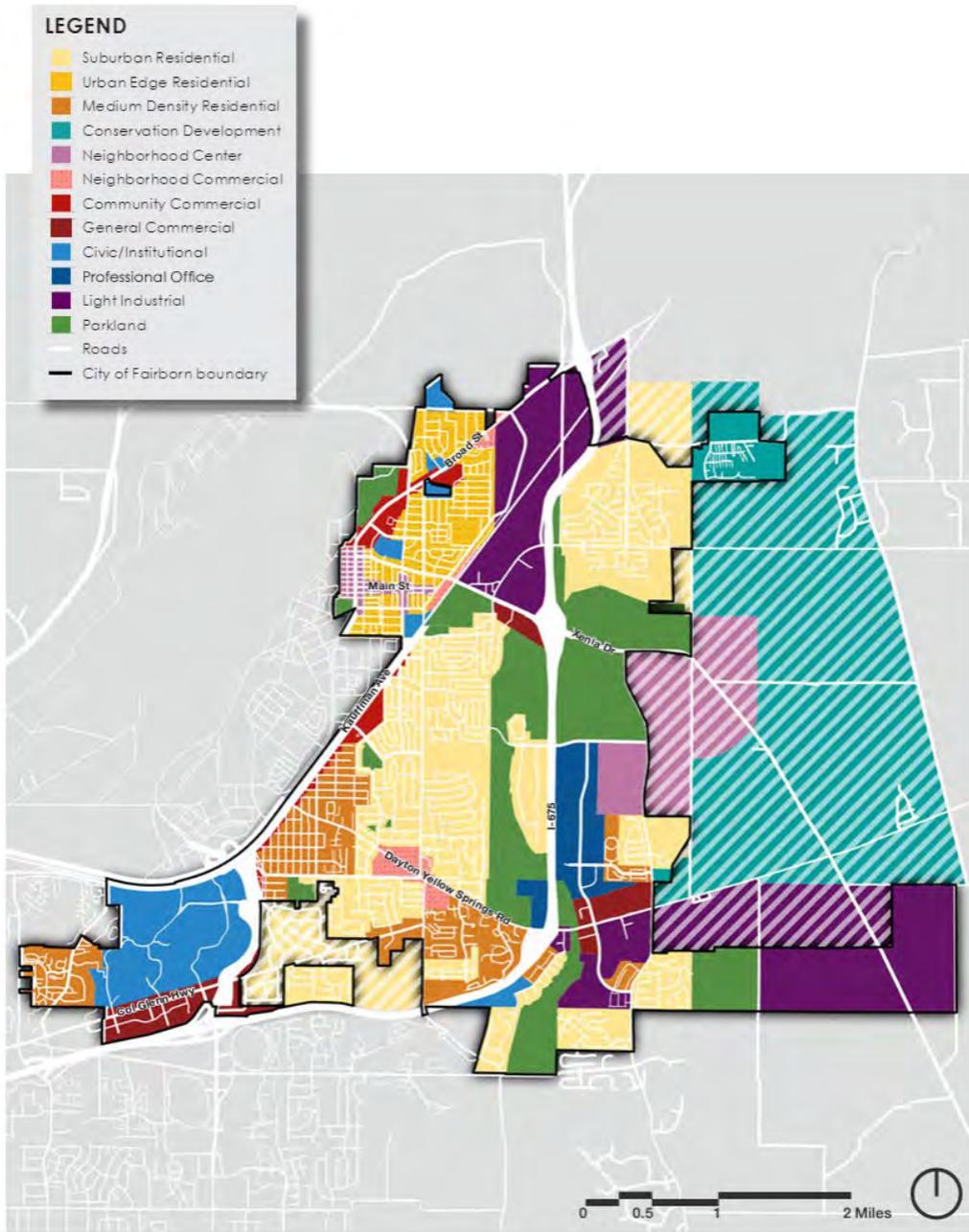
Figure 4-4 City of Beavercreek Land Use



Source: City of Beavercreek Comprehensive Plan, 2020

City of Fairborn (the eastern portion of the CUP Project Area): All the land closest to WPAFB that can be developed has been developed. This area has been entirely built out with little to no capacity for any future growth or development, except for the large light industrial area located farthest from WPAFB and at the farthest north portion of the City, which still has room for more light industrial type of uses in that area. Figure 4-5 depicts the City of Fairborn’s Future Land Use.

Figure 4-5 City of Fairborn Future Land Use



Source: City of Fairborn Comprehensive Plan, 2016

The portion of **Bath Township located due east of Fairborn** (the eastern portion of the CUP Project Area): The potential for future development in the eastern part of Bath Township, which is situated several miles away from WPAFB, is significant. However, the possibility of development in the northern and western areas of the Township is not ideal due to existing natural and man-made water features and the Township's proximity to the base.

Enon Village and the **Mad River Township** (northeastern portion of the CUP Project Area): The potential for developing multiple mixed types of land uses is very high throughout these areas. Still, the land that is developable closest to WPAFB is located several miles north and east of the base's northern boundary.

Bethel Township (northern portion of the CUP Project Area): The potential for future land uses in this area south of I-70 is almost nonexistent. The area that could be developed has been developed with a low-density residential housing subdivision, and the remaining area south of I-70 is undevelopable due to the large number of open water reservoirs and holding ponds. The land north of I-70 is several miles north of the northern boundary of WPAFB.

(Sources: Community Zoning Codes, Zoning Maps, Future Land Use Maps & Google Earth Pro 2022)

4.5 Housing Trends

Housing trends typically coincide with population growth and can indicate economic activity and vitality in the area. Rapid housing growth or slow-growth areas may reveal population increases or decreases or out-migration in certain and/or specific areas or neighborhoods. The rate of housing development is an indicator of the overall rate of growth occurring in the region, which should be considered for compatibility with operations at WPAFB.

Housing Units

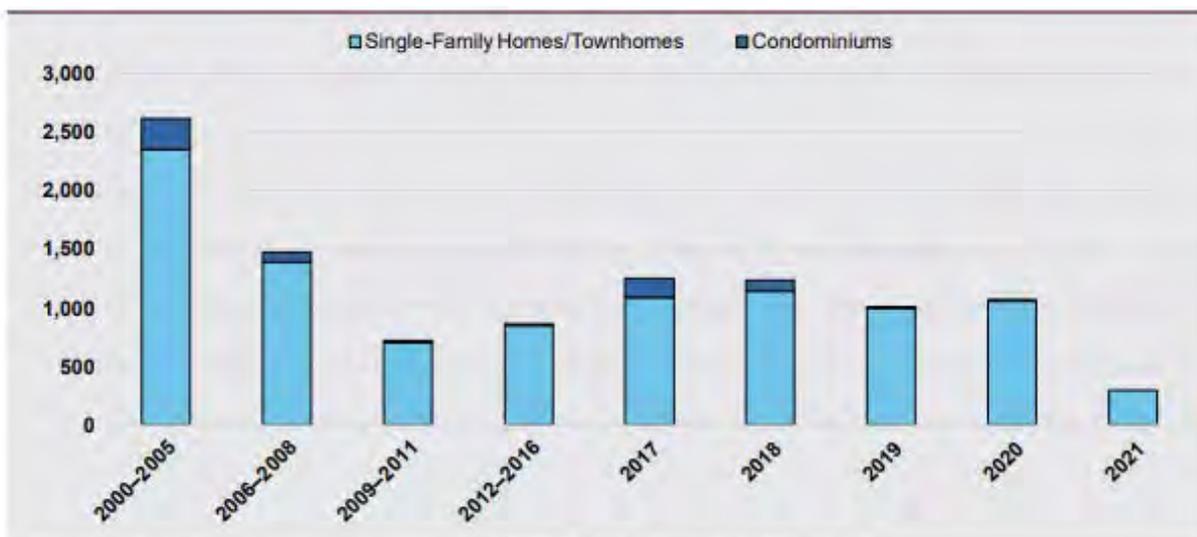
The Dayton Housing Market Area (HMA) as defined by the U.S. Department of Housing and Urban Development, Office of Policy Development and Research, includes Greene, Miami, and Montgomery Counties and is coterminous with the Dayton MSA

As measured by the number of sales units permitted, homebuilding activity within the Dayton HMA has generally increased since 2012. Still, fewer new homes have been permitted annually compared with the 2000-2008 period, as shown in Figure 4-6.

From 2000 through 2005, an average of 2,600 homes were permitted annually. In response to continued local economic contraction and the onset of the national housing market downturn, the number of homes permitted decreased to an average of 1,475 homes annually from 2006 through 2008 before declining to an average of 710 homes annually from 2009 through 2011. Production began to increase the following year, and from 2012 through 2020 — a period that included economic expansion and a shift to net in-migration — homebuilding activity increased to an average of 860 homes annually. During the 12-month period ending March 2021, approximately 1,125 homes were permitted — up 100 homes compared to the previous year's period. From 2000 through 2008, roughly 9% of all homes permitted were condominiums. Since 2009, that proportion has dropped to 3%, partly because purchasing a single-family home is relatively affordable in the HMA. All condominium construction in the HMA has occurred in Greene and Montgomery Counties since 2000.

More than 83% of new for-sale home construction since 2012 has occurred in Greene and Montgomery Counties. In Greene County, just east of WPAFB, in the city of Fairborn, is the Waterford Landing community, which was established in 2011 and has more than 200 completed homes; home sales are underway at Phase 9. The most recent phase includes 37 single-family residential lots, with three- and four-bedroom homes starting at \$296,990 and \$316,490, respectively. Approximately 20 miles southwest, in Montgomery County, the Trails at Saddle Creek in Centerville is a planned community with 277 lots. In the community, 238 lots have been sold, and 39 are available — homes in the community feature two to seven bedrooms and two to seven bathrooms. The price of the most recently sold home was \$351,500.

Figure 4-6 Permitting Activity in the Dayton Housing Market Area

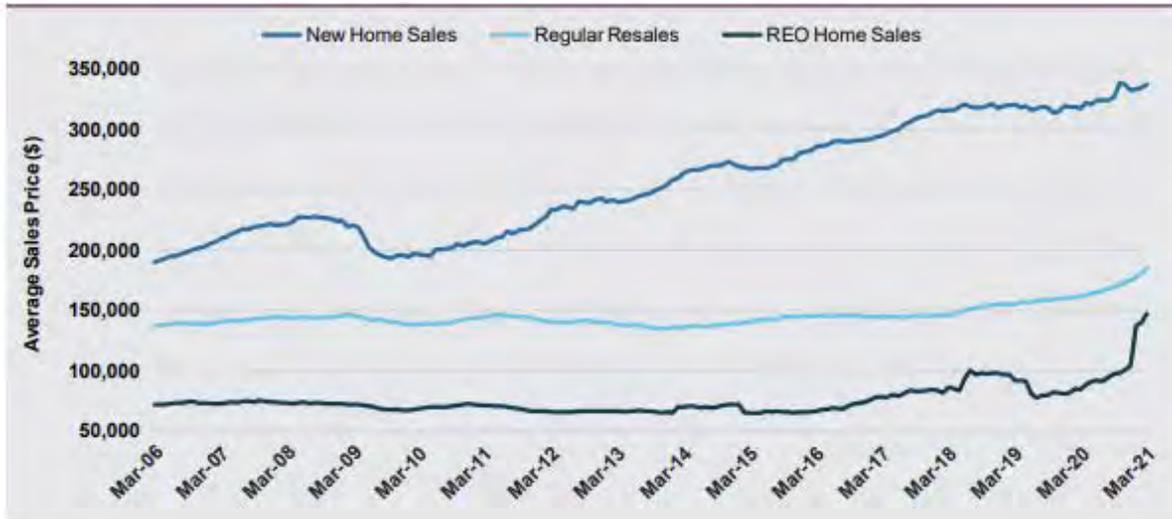


Notes: Includes single-family homes, townhomes, and condominiums. Data for 2021 are through March 2021.
 Sources: U.S. Census Bureau, Building Permits Survey; 2000 through 2020—final data and estimates by the analyst; 2021—preliminary data and estimates by the analyst.

Housing Values

Trends in Home Sales Prices, 2005 Through 2019: Figure 4-7 shows the average home sales price in the Dayton HMA between 2006 and 2021. From 2006 through 2013, the average sales price declined at an average annual rate of 1%. At the same time, regular resale home prices remained relatively unchanged, and new home sales prices increased an average of 4% a year. From 2014 through 2019, which included increased home sales, home sales prices rose an average of 4% yearly to \$164,000. The sales price increased for every housing type as the inventory of homes for sale decreased yearly.

Figure 4-7 Average Sales Price for Homes, 2006–2021



Comprehensive Dayton Metropolitan Housing Market Area Analysis, April 1, 2021

Housing Market Forecast: Demand is estimated at 3,575 new homes in the HMA in the next three years. Demand is expected to increase slightly every year in the forecast period. The limited housing supply, current housing market conditions, continued net migration, and economic trends contribute to the increased demand for the limited supply in the region. The 310 homes currently under construction will satisfy part of the demand. (Source: Comprehensive Dayton Metropolitan Housing Market Area Analysis, April 1, 2021)

4.6 Community Collaboration Events with Wright-Patterson AFB

WPAFB is the largest Air Force base operated on United States territory, spread over Montgomery and Greene Counties. It has a land area of over 8,000 acres or 12.5 sq. mi. and an on-base workforce of more than 32,000 workers, including military, civilians, and contractors. The primary and largest contribution WPAFB makes to the surrounding communities is its financial and economic impact. Overall, WPAFB is the economic engine that drives the region's economy. It is Ohio's largest single-site employer, generating over 32,000 direct on-base jobs and approximately 49,000 ancillary support jobs, equating to over \$16 billion in economic activity annually.

Aside from the obvious general contributions WPAFB provides to the many surrounding communities, by being the State's largest single-site employer with an annual payroll of over \$2.5 billion, WPAFB also has numerous specific ways in which it contributes to the surrounding communities. A few of these are described below:

Combined Federal Campaign (CFC): The CFC held a kick-off event on October 5, 2022, at the USO at WPAFB. The CFC is the world's largest workplace charity campaign program, where federal, civilian, and military donors pledge to support eligible nonprofit organizations. "For more than 60 years, members of the federal community have contributed to charities through the CFC, giving more than \$8.6 billion to help those in need locally, across the nation, and throughout the world," said Dr. Edmund Moore, 2022 CFC Dayton District chair. The 2022 CFC

runs from September 1 to January 15. Funds donated will help support more than 5,600 charities nationwide, with over 50 in the Miami Valley area.

Dayton Air Show: WPAFB annually provides nearly 400 Airmen and civilian employees as support for the Dayton Air Show, which is hosted annually at Dayton International Airport in Montgomery County, approximately 10 miles northwest of WPAFB. The support provided by the Airmen and civilian employees includes aircraft operations, marshaling, fuels, security and medical services, and public affairs for the event.

Firefighters: The 788th Civil Engineer Squadron Fire Department provided training to the Dayton International Airport Fire Department at WPAFB's fire training facility on October 5, 2022. A Dayton International Airport (DAY) crash truck and five firefighters came to the base after dark to get hands-on experience putting out aircraft fires. "We have an annual certification requirement from [the Federal Aviation Administration]," said Chief Duane Stitzel of the DAY Fire Department, "and that's to do a live training fire every year involving an aircraft or an aircraft problem, just like Wright-Patt is providing."

Air Force Community Partnership Program: This initiative, led by the Air Force Energy, Installations, and Environment office, cultivates partnerships between installations and their host communities. It is primarily focused on enhancing military readiness. Other objectives include fostering installation-community relationships and promoting innovation. The Air Force currently emphasizes initiatives with greater returns on investment that can be applied across various installations, such as having a public entity provide municipal services (solid waste collection, etc.).

4.7 Transportation

The transportation network that provides access to and from WPAFB and the land uses in and around the CUP Project Area are interconnected. Both play a vital role in helping establish the potential future developments and improvements that can be made and in understanding how to make WPAFB and the surrounding communities more compatible while meeting each participant's future growth and development needs. The transportation network for the CUP Project Area can directly impact WPAFB's day-to-day operations. This section describes the existing transportation network, shown in Figure 4-8. An analysis of the transportation network's compatibility with WPAFB is presented in Chapter 6.

Roadway Network

The CUP Project Area is supported by a network of interstates, state routes/highways, and internal local roads in and around the base that interconnect all the gate accessways into and out of WPAFB. SR-444, SR-235, and I-675 primarily serve the gates.

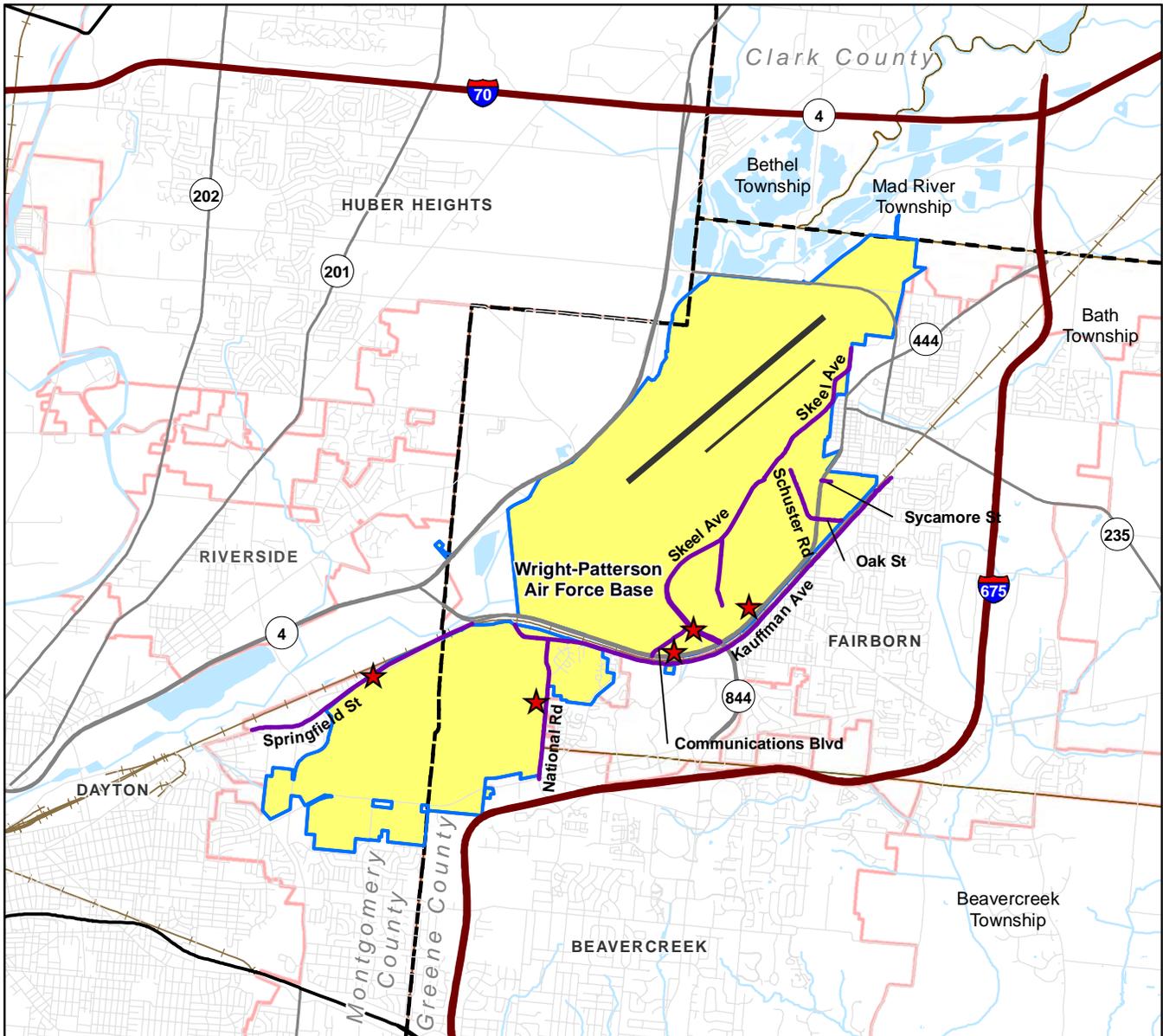
- **Interstates:** I-70 runs east and west a few miles north of the WPAFB CUP Project Area. Northeast of the Dayton metropolitan area, in Mad River Township, and a few miles north of the City of Fairborn, I-675 runs south from I-70. It then runs along the eastern side of WPAFB until it connects with SR-444 at the northeast end of the base.
- **State Routes:** SR-444 intersects with SR-235 just outside the northeast corner of WPAFB. These two state routes encircle the base and provide the primary access roads to the 11 gates that lead into and out of the



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WPAFB complex. Even though the primary access roads to these gates are state routes, many local roadways provide access. SR-4 also provides access to the CUP Project Area coming from the west out of the City of Dayton, which also provides access to SR-235 and SR-444.

- **Local Roadways:** The local roadways that provide direct access to the gates into WPAFB include Schuster Road, Springfield Street, Kaufman Avenue, Communications Boulevard, Skeel Avenue, Oak Street, Sycamore Street, National Road, and Eastbrook Drive.
- **Gates into WPAFB:** Due to the sheer size and configuration of the base, there are multiple gates, both external (into WPAFB) and internal (between various facilities at WPAFB). External gates include the Main Gate and five other entry gates. The gate at the northern end of WPAFB accommodates commercial vehicle inspections.



Legend

- ★ Main Gate
- Primary Access Roads
- Interstate
- US Highway
- State Route
- Local Road
- Railroad
- Wright-Patterson AFB
- Runway
- City Boundary
- Township
- County Boundary
- Water Body



Source: USGS, 2023. Matrix Design Group, 2023. Wright - Patterson AFB, 2023



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Transit & Public/Private Transportation Services

Since WPAFB has numerous employees and contractors living in cities and communities surrounding the base and the CUP Project Area, they require many transit services to and from the base regularly throughout the day and the week. Due to recent security measures being adopted, these transit services are not allowed in all areas of the base. The two primary public transit bus services in the CUP Project Area are the Greater Dayton Regional Transit Authority (RTA) and Greene CATS Public Transit.

There is also a wide array of public and private vanpool services throughout these communities and multiple private carpool transportation services to and from WPAFB, including those created by the base employees themselves. Abundant private taxis and Uber services also provide transportation to and from the base. The two primary vanpool services for the CUP Project Area are Miami Valley Rideshare and GOHIO Commute Vanpool and Carpool.

A consolidated on-base shuttle provides express shuttle services every hour from 7:30 a.m. until 4:30 p.m.. After-duty hours and weekend transportation is available by request for official business only.

Local Airports

Airports are important for regional, national, and international connectivity, and they are vital when considering the highly active flight operations that occur daily at WPAFB. The airports near the CUP Project Area include Dayton International Airport, Greene County-Lewis A. Jackson Regional Airport, Springfield-Beckley Municipal Airport, and Renegades Local Airport.

- **Dayton International Airport (DAY)** is the closest international airport to the CUP Project Area, located 10 miles north of downtown Dayton in Montgomery County. It provides regional, national, and international flights. DAY is the hub for the following cargo airlines: PSA, Air Wisconsin, Emery Worldwide, Piedmont, and Heartland. It also provides flights from the following passenger airlines: Allegiant, American, Avelo, Delta, and United.
- **Greene County-Lewis A. Jackson Regional Airport** is the closest regional, public, instrument flight rules (IFR) airport. It is located in the City of Xenia, approximately 10 miles from WPAFB.
- **Springfield-Beckley Municipal Airport** is a municipally owned airport located about five miles south of the City of Springfield, in Clark County. It is a full-service, small aircraft airport.

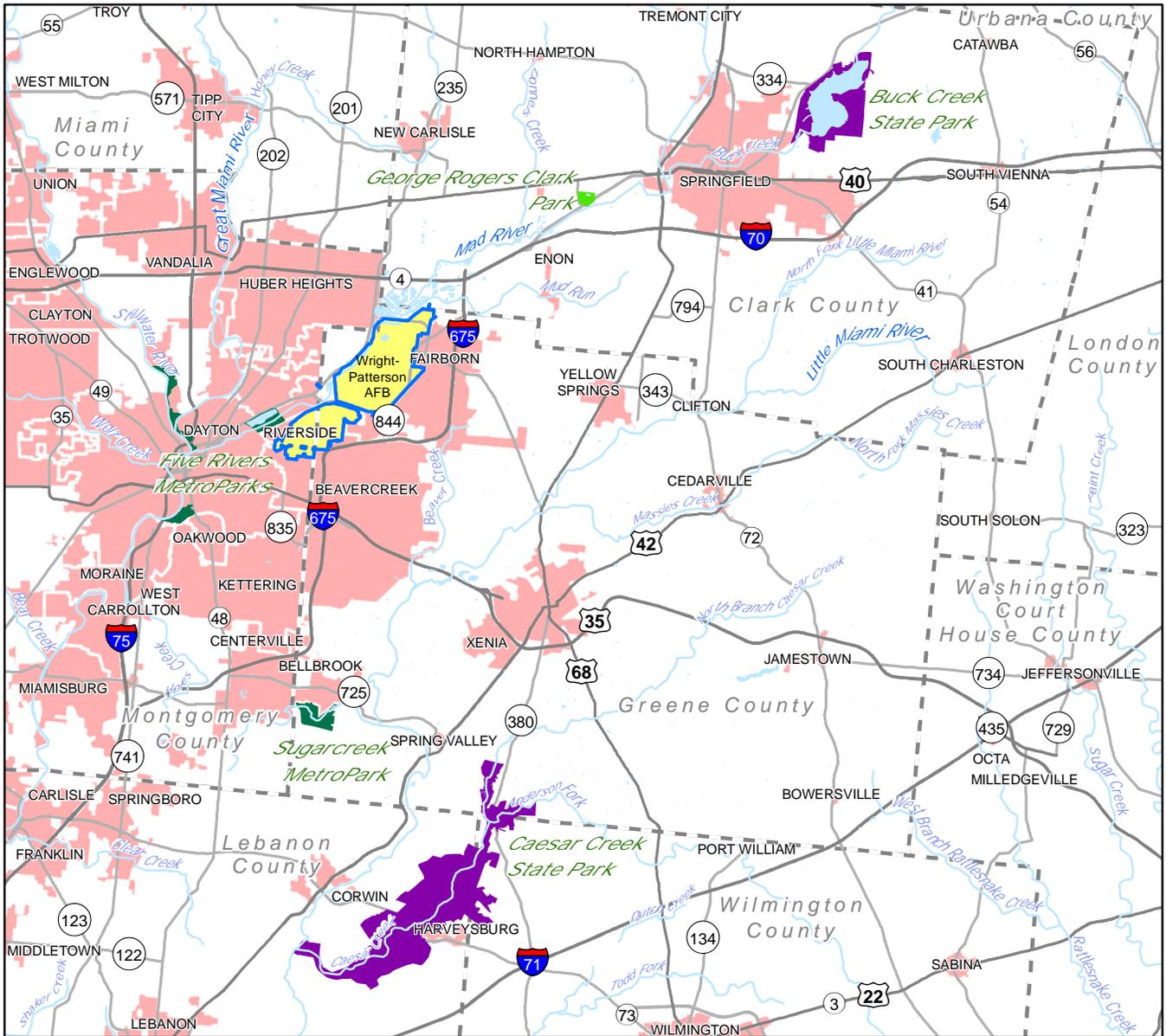
4.8 Natural Resources

WPAFB is in a region with diverse natural resources typical of the Midwest. The surrounding area has a variety of natural features and resources. They include, but are not limited to, the following:

- Rivers
 - The Mad River is a significant water resource in Clark County. It provides recreational opportunities, supports aquatic ecosystems, and is historically important in the region.
 - The Little Miami River flows through Greene County, providing a significant water resource. It supports aquatic ecosystems and recreational activities like fishing and canoeing and contributes to the region's overall environmental health.
 - The Great Miami River flows through Montgomery County, providing a significant water resource. It supports aquatic ecosystems and recreational activities and, historically, has played a role in transportation and industry.
- Parks
 - Buck Creek State Park, located in Clark County, offers a variety of outdoor activities, including boating, fishing, camping, and hiking. The park contributes to the County's natural recreation spaces.
 - George Rogers Clark Park is another natural area in the county that provides opportunities for hiking and enjoying nature. It contains woodlands, meadows, and wildlife habitats.
 - Caesar Creek State Park extends into Greene County, offering opportunities for outdoor activities such as hiking, boating, camping, and wildlife observation. The park contributes to the preservation of natural areas.
 - Sugarcreek MetroPark, located in Greene County, provides residents and visitors with green spaces, hiking trails, and opportunities to appreciate nature. The park includes woodlands, meadows, and wetlands.
 - Five Rivers MetroParks in Montgomery County is a parks system that offers numerous parks and nature preserves. These areas provide outdoor recreation, wildlife observation, and environmental education opportunities.

All four counties within the region have fertile agricultural lands where farmers cultivate crops and livestock. Agriculture is an integral part of the region's economy. In that same vein, the region contains woodlands and forests, which support biodiversity and provide habitats for various plant and animal species. The area also has wetlands crucial to the region's diverse ecosystem.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN



Legend

- State Park
- MetroParks
- Park
- Water Body
- Rivers and Streams
- Wright-Patterson AFB
- County Boundary
- City
- Interstate/US Highway
- State Route



Source: Esri, 2023.

0 2 4 8 Miles **Figure 4-9 Regional Natural Resources**



5

Compatibility Tools

This chapter reviews existing programs, plans, policies, laws, governing regulations, and other planning tools that are used, applied, or available for evaluation and/or mitigating compatibility issues in the CUP Project Area. Several of these tools directly or indirectly address compatibility through other topics covered. This review summarizes applicable planning tools and how each may apply to compatibility findings, as defined in Chapter 6: Compatibility Assessment.



5.1 Federal Laws, Regulations, and Programs

Federal policy, laws, and programs have evolved to impact almost every aspect of land use. A broad range of federal plans, programs, and regulations impact WPAFB directly or indirectly. These are carried out by the federal government or, in some cases, empower state, regional, county, and local governmental agencies to implement these policies, programs, and regulations. The following federal programs and policies were evaluated to determine areas of improvement that will enable better compatible land use planning at the local and regional levels within the CUP Project Area.

The following list does not exhaustively account for every relevant federal law or program. Still, it attempts to capture those considered relevant to assessing compatibility issues and potential strategies stakeholders might employ to avoid or mitigate conflicts.

Federal tools assist land use **decision-makers and planners** at all levels of government **in making informed decisions that enable compatible land use** development between military installations and the surrounding communities. Federal law authorizes federal, state, and local entities to implement regulatory measures and policies to protect the multiple resources involved in land use and military compatibility planning. These measures and policies protect the public’s quality of life and general welfare and preserve military facilities and operating areas. Brief descriptions are provided for each identified law, regulation, Department of Defense Instruction (DoDI), or Air Force Instruction (AFI). These are listed in Table 5-1.

Table 5-1 Federal Planning Tools

Federal Law, Regulation, or Program	Location
AFI 32-1015 – Integrated Installation Planning	5-16
AFMAN 32-7003 – Environmental Conservation	5-9, 5-14
AFM 19-10/TM 5-803-2/NAVFAC P-970 – Planning in the Noise Environment	5-17
Air Force Installation Energy Strategic Plan 2021	5-11
Air Force Instruction 90-2001 – Mission Sustainment	5-20
Air Force Playbook for Foreign Investment Assessments Proximate to Military Equities	5-18
Archaeological Resources Protection Act	5-8
Building Resilient Infrastructure and Communities	5-12
Clean Air Act	5-12
Clean Water Act	5-12

Table 5-1 Federal Planning Tools (continued)

Federal Law, Regulation, or Program	Location
Comprehensive Environmental Response, Compensation, and Liability Act	5-12
Defense Community Infrastructure Program	5-18
Department of Air Force Policy Directive 90-22 – Air Force Community Partnership Program	5-20
Department of Defense Climate Adaptation Plan	5-19
Department of Defense Minimum Antiterrorism Standards for Buildings (UFC 4-010-01)	5-18
Department of Energy Office of Energy Efficiency and Renewable Energy	5-10
Department of Housing and Urban Development Noise Regulation	5-17
DoD Directive 4170.11 – Installation Energy Management	5-10
DoD Operational Noise Manual	5-17
DoD Readiness and Environmental Protection Integration Program	5-14
DoDI 4165.57 – Air Installations Compatible Use Zones Program	5-16
DoDI 4710.02 – DoD Interaction with Federally Recognized Tribes	5-9
DoDI 4715.03 – Natural Resource Conservation Program	5-14
DODI 4715.07 – Defense Environmental Restoration Program	5-14
DoDI 4715.13 – DOD Operational Noise Program	5-17
DoDI 4715.16 – Cultural Resources Management	5-9
DoDI 4715.24 – The Readiness and Environmental Protection Integration Program and Encroachment Management	5-16
Endangered Species Act	5-8
FAA Advisory Circular 150/5200-33C – Hazardous Wildlife Attractants on or near Airports	5-5
FAA Guidance to Law Enforcement	5-7
FAA Policy: Review of Solar Energy System Projects on Federally Obligated Airports	5-6

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Table 5-1 Federal Planning Tools (continued)

Federal Law, Regulation, or Program	Location
FAA UAS Registry	5-7
Federal Aviation Act	5-5
Federal Land Policy and Management Act of 1976	5-15
Grid Resilience and Innovation Partnerships Program	5-10
Intergovernmental Support Agreements	5-19
Land and Water Conservation Fund	5-15
Migratory Bird Treaty Act	5-13
Military Aviation and Installation Assurance Siting Clearinghouse	5-11
National Environmental Policy Act	5-13
National Historic Preservation Act	5-8
National Pollutant Discharge Elimination System	5-13
Noise Control Act	5-16
OLDCC's Community Noise Mitigation Program	5-16
Partners in Flight Program	5-6
Safe Drinking Water Act	5-13
Sentinel Landscapes Partnership	5-14
Sikes Act	5-13
Telecommunications Act and the Federal Communications Commission	5-6
Title 14 CFR Part 107 – FAA Small Unmanned Aerial Systems	5-7
Title 14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace	5-6
U.S. Aviation Hazard Advisory System	5-8

Airspace

Federal Aviation Act

This Act established the FAA in 1958. The mission of the FAA is to regulate civil aviation and U.S. commercial space transportation, maintain and operate air traffic control and navigation systems for both civil and military aircraft, and develop and administer programs relating to aviation safety and the National Airspace System. There are four types of airspace within the National Airspace System:

- **Controlled airspace:** A term encompassing the different classifications of airspace (Class A, Class B, Class C, Class D, and Class E) with defined dimensions where air traffic control (ATC) provides service to IFR and VFR flights according to the airspace classification.
- **Uncontrolled airspace:** Refers to Class G airspace where ATC has no authority or responsibility, and flights generally operate under visual flight rules (VFR).
- **Special-use airspace:** Airspace designated for specific activities or with limitations imposed on non-participating aircraft operations. The six basic types of special-use airspace (SUA) are Prohibited Areas, Restricted Areas, Warning Areas, MOAs, Alert Areas, and Controlled Firing Areas (CFAs).
- **Other airspace:** Includes various types such as Local Airport Advisory (LAA), Military Training Routes (MTR), Temporary Flight Restrictions (TFR), Parachute Jump Aircraft Operations, Published VFR Routes, Terminal Radar Service Areas (TRSA), National Security Areas (NSA), Air Defense Identification Zones (ADIZ), and Defense VFR (DVFR) requirements.

FAA Advisory Circular 150/5200-33C — Hazardous Wildlife Attractants on or near Airports

This Advisory Circular (AC) guides certain land uses that can potentially attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants.

The FAA recommends the guidance in this AC for land uses that potentially attract hazardous wildlife on or near public-use airports. This AC does not constitute a regulation, is not mandatory, or is legally binding. The FAA will not rely on it as a separate basis for affirmative enforcement action or other administrative penalties. Conformity with this AC is voluntary, and nonconformity will not affect rights and obligations under existing statutes and regulations except as follows:

- Airports that hold Airport Operating Certificates issued under Title 14, CFR, Part 139, Certification of Airports, Subpart D, may use the standards, practices, and recommendations contained in this AC as one, but not the only, acceptable means of compliance with the wildlife hazard management requirements of Part 139.
- The FAA recommends guidance in this AC for airports that receive funding under federal grant assistance programs, including the Airport Improvement Program. See Grant Assurance #34.

FAA Policy: Review of Solar Energy System Projects on Federally Obligated Airports

This document establishes FAA policy for proposals by sponsors of federally obligated airports to construct solar energy systems on airport property. The FAA is publishing this policy because it is in the public interest to enhance safety by analyzing the ocular impact of proposed solar energy systems on airport traffic control tower personnel. The policy applies to proposed on-airport solar energy systems at federally obligated airports.

Partners in Flight Program

The DoD has implemented a Partners in Flight program that sustains and enhances the military testing, training, and safety mission through habitat-based management strategies. The program assists natural resource managers in monitoring, inventorying, researching, and managing birds and their habitats. As part of the Partners in Flight program, a strategic plan is created that can be incorporated into the BASH plan. This program reaches beyond the boundaries of the installation to facilitate community partnerships and determine the status of bird populations to prevent the further endangerment of birds.

Telecommunications Act and the Federal Communications Commission

The Telecommunications Act of 1996 was largely intended to increase competition in the telecommunications marketplace. The increasing use and development of personal mobile phones, satellite transmission, high-speed fiber optics, and related technologies continuously create demand for new telecommunications technology and infrastructure.

New telecommunications tower siting requires compliance with the Federal Communications Commission's (FCC) environmental standards and procedures, including the National Environmental Policy Act (NEPA) and Endangered Species Act, the National Historic Preservation Act, adherence to applicable FAA requirements, and structure registration with the FCC. The actual approval of telecommunications improvements is subject to state and local permitting and review; however, state and local authority is limited by federal law. For instance, states and local jurisdictions cannot base their decisions on any purported environmental effects of radio frequency transmissions.

Title 14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace

Chapter 1, Subchapter E, Part 77 (Safe, Efficient Use, and Preservation of the Navigable Airspace) of Title 14 of the Code of Federal Regulations (CFR), which codified the Federal Aviation Act, is a critical component of the CFR in establishing a mechanism for determining if proposed structures or objects would constitute vertical obstructions or flight hazards in navigable airspace. Part 77 specifies the distance and dimensions of the imaginary surfaces around civil and military airports used to assess the flight risk from the proposed construction of towers or tall structures.

Title 14 CFR Part 107 – FAA Small Unmanned Aerial Systems

The FAA governs unmanned aerial systems (UAS), commonly known as drones, in the national airspace. Drone operations for small UAS aircraft, defined as under 55 pounds, can be conducted under the Small UAS Rule (Title 14 Code of Federal Regulations, Part 107), which requires operator certification, among other UAS regulations.

Title 14 CFR Part 107 specifies operating requirements for all UASs under 55 pounds. This includes manually operating the UAS, maintaining a visual line-of-sight, and getting approval from the relevant air traffic control tower before operating a UAS in Class B, C, D, and E airspace using the Low Altitude Authorization and Notification Capability (LAANC) desktop or mobile app. It also sets operational limitations, including a weight limit of 55 pounds, a speed limit of 100 miles per hour, and a height limit of 400 feet, and it only permits daylight operations.

UAS operators must pass a remote pilot certification exam and register with the FAA. Certified UAS operators can request waivers to operational requirements, including altitude, special use of airspace, and flying at night. Exceptions to this rule under the Recreational Use of Model Aircraft Rule require registration of small UASs with the FAA, marking the aircraft with a registration number, and carrying the registration while operating the UAS.

Recreational use of small UAS aircraft is permitted by 49 United States Code § 44809 as an exception to Part 107, provided the operator follows the eight requirements of this exception, including registration of UAS vehicles. This exception is sometimes called the Recreational Use of Model Aircraft Rule.

FAA UAS Registry

All UAS operating in the national airspace must be registered with the FAA at its Drone Zone website. The only exception made is for model aircraft with a weight under 0.55 pounds. The Drone Zone website is <https://faadronezone.faa.gov/#/>.

The FAA may take enforcement action against anyone who conducts an unauthorized UAS operation or operates a UAS in a way that endangers the safety of the national airspace system. FAA enforcement tools include warning notices, letters of correction, and civil penalties.

FAA Guidance to Law Enforcement

The FAA asks local law enforcement agencies to document and provide the following information to the FAA:

- Identity of operators and witnesses (name, contact information)
- Type of operation (hobby, commercial, public/governmental)
- Type of device(s) and registration information (number/certificate)
- Event location and incident details (date, time, place)
- Evidence collection (photos, video, device confiscation)

Additionally, the FAA recommends law enforcement always follow agency policies and take appropriate action based on the facts and circumstances of the incident and site/area-specific laws and rules. FAA enforcement action does not impact any enforcement action(s) taken by law enforcement agencies. Local ordinances that may apply include, but are not limited to, reckless endangerment, criminal mischief, voyeurism, and inciting violence.

U.S. Avian Hazard Advisory System

The U.S. Avian Hazard Advisory System (USAHAS) is a GIS-based bird avoidance model developed by the U.S. Air Force for the “analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data.” The model provides up-to-date information about bird activity and movements to assist pilots and flight planners in the scheduling and use of flight routes. The model can also be used as a forecasting tool to estimate bird strike risk.

Cultural

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 (ARPA) was enacted to secure the protection of archaeological resources and sites on public lands and Native American lands and foster increased cooperation between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data.

Endangered Species Act

This act aims to protect and recover imperiled species and the ecosystems they depend on by establishing a program to conserve threatened and endangered (T&E) plants, animals, and their habitats. The Endangered Species Act is administered by two federal agencies, the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). USFWS is responsible for the recovery of terrestrial, freshwater, and catadromous species. NMFS is responsible for marine species and anadromous fish. NMFS manages recovery for 165 endangered and threatened marine species, including 66 foreign species. As of January 2020, the Services have listed 2,273 species worldwide as endangered or threatened, with 1,662 species in the United States.

The DoD manages nearly 500 T&E species and over 550 species at risk of needing listing protections on its installations. Of those, 60 listed and 74 at-risk species exist exclusively on DoD lands.

National Historic Preservation Act

The National Historic Preservation Act of 1966 established a partnership between the federal government and state, tribal, and local governments supported by federal funding for preservation activities. The law also created the President’s Advisory Council on Historic Preservation and the National Register of Historic Places, an official list of important buildings, structures, districts, objects, and archeological sites because of their connection with the past. It also contains Sections 106 and 110. Section 106 requires federal agencies to consider the impact of their actions on historic properties. This process for federal projects (that use federal funds) determines whether the work to be done would harm a site and, if so, a way to avoid or minimize that harm. Section 110 requires all federal agencies to establish preservation programs and designate a preservation officer to coordinate their historic preservation activities.

The DoD historic property portfolio includes 49 individual National Historic Landmarks, 3,171 National Historic Landmark contributing properties, 2,396 individual and contributing historic assets listed in the National Register of Historic Places, over 15,000 historic assets determined eligible for inclusion in the National Register of Historic Places, and over 132,000 recorded archaeological sites.

DoDI 4710.02 – DoD Interaction with Federally Recognized Tribes

This federal instruction provides procedures for DoD interactions with federally recognized tribes whenever an action is proposed. Installation commanders must establish the initial consultation relationship with the tribe(s) that has a cultural or historical affiliation with installation lands and must involve tribal governments early in the planning process for proposed actions that may potentially affect protected tribal rights, land, or resources.

DoDI 4715.16 – Cultural Resources Management

Within these instructions is guidance for compliance with federal regulatory requirements for integrated management of cultural resources on DoD land. Cultural resources include historical, archaeological, architectural, and cultural values. The DoD policy sets out three objectives:

- Manage and maintain cultural resources under DoD control sustainably through a comprehensive program that considers preserving historic, archaeological, architectural, and cultural values; is mission-supporting; and results in sound and responsible stewardship.
- Be an international and national leader in the stewardship of cultural resources by promoting and interpreting the cultural resources it manages to inspire DoD personnel and to encourage and maintain U.S. public support for its military.
- Consult in good faith with internal and external stakeholders and promote partnerships to manage and maintain cultural resources by developing and fostering positive partnerships with federal, tribal, state, and local government agencies, professional and advocacy organizations, and the general public.

AFMAN 32-7003 – Environmental Conservation

The USAF's policy for managing cultural resources supports the military mission by meeting the legal compliance requirements within existing laws and federal environmental protection policies. The program's goals are to identify, manage, and maintain important cultural resources in a spirit of stewardship for the benefit of this and future generations of Americans and to endeavor to integrate cultural resource stewardship with the needs of its primary military mission.

Energy

Department of Energy Office of Energy Efficiency and Renewable Energy

The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is responsible for developing and delivering market-driven solutions for energy-saving homes, buildings, manufacturing, sustainable transportation, and renewable electricity generation. EERE's mission is to create and sustain American leadership in transitioning to a global clean energy economy. Its vision is a strong and prosperous America powered by clean, affordable, and secure energy. The Federal Energy Management Program (FEMP) provides guidance, reference materials, and resource links to help agencies comply with federal laws and requirements. In addition, FEMP and the DOE publishes notices and rules related to federal energy management.

DoD Directive 4170.11 – Installation Energy Management

Directive 4170.11 requires that installation energy management meet applicable goals and policies and:

- Operate a secure, reliable, and efficient utility infrastructure;
- Effectively and efficiently procure utility commodities; and
- Maximize energy and water conservation efforts.

The availability, reliability, and security of electrical, water, and fuel resources and supporting infrastructure are critical for installation resiliency and continuity in case of events driven by climate change impacts.

Grid Resilience and Innovation Partnerships Program

As part of the Bipartisan Infrastructure Law, the Grid Deployment Office (GDO) administers a \$10.5 billion Grid Resilience and Innovation Partnerships (GRIP) Program to enhance grid flexibility and improve the power system's resiliency against growing threats of extreme weather and climate change.

These programs will accelerate the deployment of transformative projects that will help ensure the reliability of the power sector's infrastructure so that all American communities can access affordable, reliable, clean electricity anytime, anywhere. The Grid and Transmission Program Conductor is a clearinghouse for GDO's transmission and grid resiliency financing programs and other existing DOE transmission and grid programs. There are three primary funding streams within the GRIP program:

- Grid Resilience Utility and Industry Grants (\$2.5 billion)
 - This program will fund comprehensive transformational transmission and distribution technology solutions that will mitigate multiple hazards across a region or within a community, including wildfires, floods, hurricanes, extreme heat, extreme cold, storms, and any other event that can disrupt the power system. This program provides grants to electric grid operators, electricity storage operators, electricity generators, transmission owners or operators, distribution providers, and fuel suppliers.

- Smart Grid Grants (\$3 billion)
 - This grant program has broad eligibility and is open to domestic entities, including institutions of higher education, for-profit entities, nonprofit entities, state and local governmental entities, and tribal nations.
- Grid Innovation Program (\$5 billion)
 - Broad project applications are of interest, including interregional transmission projects, investments that accelerate interconnection of clean energy generation, utilization of distribution grid assets to provide backup power and reduce transmission requirements, and more.

Military Aviation and Installation Assurance Siting Clearinghouse

Military Aviation and Installation Assurance Siting Clearinghouse (Clearinghouse) works with industry to overcome risks to national security while promoting compatible domestic energy development. Energy production facilities and transmission projects involving tall structures, such as wind turbines, solar power towers, panels, and electrical transmission towers, may degrade military testing and training operations. In the national system of ground-based surveillance radars, the creation of "clutter" generated from wind turbines can present a hazard to air safety and surveillance. Wind turbines near military test and training ranges can also impact airborne military radar capabilities, as electromagnetic interference from generating and transmitting electricity can negatively impact critical DoD testing and training activities. Likewise, solar capture systems may present hazards to aircraft and air traffic control tower operations due to potential "glint" or longer duration "glare" reflecting off panels.

Air Force Installation Energy Strategic Plan 2021

The Air Force Installation Energy Strategic Plan 2021 supports mission assurance using a mission-centric view to improve the resiliency of energy and water systems that enable Department of the Air Force (DAF) capabilities. To execute this approach, the plan lays out three goals – identify enabling system vulnerabilities, improve resiliency planning, and ensure resiliency results – which have been selected to support the installation energy vision of Mission Assurance Through Energy Assurance. Strategic objectives set the major milestones or actions required to achieve each goal. The plan includes an overview of the DAF Facility Energy Program governance structure introduced in DAF Instruction 90-1701 (which is an updated instruction to [AFPD] 90-17, listed below) as well as a suite of assessment, planning, execution, and verification tools to assist the DAF in realizing these goals. The plan enhances the ability of the DoD to build military readiness in support of a more lethal force and to reform DoD business practices as outlined in the 2018 National Defense Strategy. The plan ensures unexpected disruptions do not impair DAF readiness by taking a mission-focused approach to mitigate potential vulnerabilities in enabling systems supporting critical infrastructure and key military capabilities. The content of this plan will be reviewed every two years and updated as needed to keep pace with the continuously changing operational landscape.

Environmental

Building Resilient Infrastructure and Communities

Building Resilient Infrastructure and Communities (BRIC) is a Federal Emergency Management Agency (FEMA) grant. BRIC will support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program's guiding principles are supporting communities through capability- and capacity-building, encouraging, and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency.

Clean Air Act

The Clean Air Act (CAA) is a comprehensive federal law that regulates air emissions from stationary and mobile sources to control air pollution. The CAA also gives the EPA the authority to limit emissions of air pollutants originating from sources. Under the CAA, the Environmental Protection Agency (EPA) establishes limits for six criteria pollutants through the National Ambient Air Quality Standards (NAAQS). Standards are established to protect public health and welfare. Individual states may have more stringent air pollution laws, but they may not have less stringent standards than those set by the EPA. Under the law, states must develop State Implementation Plans (SIPs) that outline how each state will control air pollution under the CAA.

Clean Water Act

The Clean Water Act (CWA) governs and provides guidance for managing water resources and controls and monitors water pollution in the U.S. The CWA establishes the goal of eliminating the release of toxic substances and other sources of water pollution to ensure that surface waters meet high-quality standards.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) supports cleaning up sites with hazardous contaminants. It promotes a direct response to the release, or the threatened release, of hazardous substances that may endanger public health or the environment. CERCLA authorities complement those of the Resource Conservation Recovery Act, which primarily regulates ongoing hazardous waste handling and disposal.

Hazardous waste is sometimes present in or around military installations, particularly where munitions and ordnance are stored and used for training. If not disposed of properly, hazardous waste can harm the installation tenants, surrounding communities, and the environment. While the U.S. Environmental Protection Agency has established the Superfund program to clean up contaminated sites can be complex and time-consuming.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 U.S.C. 703-712) was established in 1918 with cooperation from Canada, Mexico, Japan, and Russia to protect migratory bird species. This Act prohibits the killing, capturing, and transporting of protected migratory bird species without Department of Interior authorization. Many birds common to the southern United States are protected under this Act, including ducks, geese, and gulls. The presence of protected migratory birds within air operational areas could delay and/or impact military operations.

National Environmental Policy Act

The NEPA established the nation's policy regarding protecting and enhancing the environment. It requires federal agencies to analyze and consider the potential environmental impact of their actions. The purpose of NEPA is to promote informed decision-making by federal agencies by providing detailed information concerning significant environmental impacts on ecological and natural resources and the human environment, such as community character, public health and safety, and cultural resources.

All federal agencies, including the DoD, and all federally funded undertakings must comply with NEPA, including documentation requirements, before receiving a permit, approval, or funding. NEPA requires that the military review the potential impact of proposed actions on the environment, including in surrounding civilian communities, and consider measures to reduce, avoid, or mitigate identified adverse environmental impacts.

National Pollutant Discharge Elimination System

Per the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge into U.S. waters. Individual homes connected to a municipal system that uses a septic system or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if they discharge directly to surface waters.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) ensures drinking water quality in the U.S. The SDWA authorizes the EPA to set national health-based drinking water standards to protect against natural and man-made contaminants. The SDWA applies to every public water system in the U.S. because a reliable source of clean, potable water is necessary for any population center to function and grow and for mission activities at military installations.

Sikes Act

The Sikes Act requires the DoD to develop and implement Integrated Natural Resources Management Plans (INRMPs) for military installations across the U.S. INRMPs are prepared in cooperation with the USFWS and state fish and wildlife agencies to ensure proper consideration of fish, wildlife, and habitat needs. The Sikes Act requires INRMPs to be reviewed every five years with the USFWS and state fish and wildlife agencies.

DoDI 4715.03 – Natural Resource Conservation Program

This DoDI guides compliance with federal, state, and local regulatory requirements for the integrated management of natural resources on DoD land. The Instruction specifies that those DoD components responsible for natural resources management shall also ensure that installations prepare an Integrated Natural Resources Management Plan.

DoDI 4715.07 – Defense Environmental Restoration Program

The Defense Environmental Restoration Program implements a policy to reduce risk to human health and the environment due to military activities as well as facilitate compliance with applicable statutes, regulations, executive orders, and other legal requirements governing environmental restoration by providing necessary policies and procedures and by implementing guidance for conducting environmental restoration activities.

AFMAN 32-7003 – Environmental Conservation

This manual addresses the management of natural resources on Air Force properties to comply with federal, state, and local standards. This manual provides the framework for documenting and maintaining a natural resources management program. The primary objective of the USAF natural resources program is to ensure continued access to land, and airspace required to accomplish the Air Force mission by maintaining these resources in a healthy condition.

DoD Readiness and Environmental Protection Integration Program

The DoD Readiness and Environmental Protection Integration (REPI) Program is a key tool for combating encroachment that can limit or restrict military training, testing, and operations. The REPI Program protects these military missions by helping remove or avoid land-use conflicts near installations and addressing regulatory restrictions that inhibit military activities.

The REPI Program is administered by the Office of the Secretary of Defense (OSD). A key component is using buffer partnerships among the military services, private conservation groups, and state and local governments, authorized by Congress in 10 U.S.C. § 2684a.

These win-win partnerships share the cost of acquisition of easements or other interests in land from willing sellers to preserve compatible land uses and natural habitats near installations and ranges that help sustain critical, at-risk military mission capabilities. These partnerships often work across boundaries and protect working lands (e.g., farms, forests, ranches), wildlife habitat, water resources, natural spaces for recreational opportunities, and threatened and endangered species.

Sentinel Landscapes Partnership

The Sentinel Landscapes Partnership is between federal, state, and local governments, agencies, and nongovernmental organizations to promote sustainable land management practices around military installations and ranges on private land. The partnership aims to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, and increase climate change resiliency.

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) protects watersheds and drinking water supplies, preserves our national heritage, and conserves natural areas and open space for wildlife and recreation – all while providing sustainable, domestic jobs in urban and rural communities across America. The enactment of the Great American Outdoors Act in August 2020 ensures that the LWCF permanently authorizes \$900 million for conservation and recreation projects annually. The LWCF has a project toolkit that includes seven unique programs:

- Federal Land Acquisition Program
- State and Local Assistance Program
- Outdoor Recreation Legacy Partnership Program
- Forest Legacy Program
- American Battlefield Protection Program
- Cooperative Endangered Species Conservation Fund – Section 6
- Highlands Conservation Act Grant Program

Land Use

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) authorizes the Bureau of Land Management (BLM) to manage its lands and plan for land uses according to national and local interests. The law mandates that BLM lands identified for development shall uphold and protect the scientific, scenic, historical, ecological, environmental, and other values unique to specific geographies. This law is the impetus for the various resource management plans developed and prepared for the BLM to meet the federal requirements.

DoDI 4165.57 – Air Installations Compatible Use Zones Program

The Air Installations Compatible Use Zones (AICUZ) Program established a policy and assigned responsibilities for educating personnel and engaging local communities on noise, safety, and compatible land use in and around air installations. All the military branches have adopted the land use compatibility guidelines developed in the AICUZ DoDI. The AICUZ Program promotes long-term compatible land use on and near air installations by:

- Encouraging state and local governments to adopt enabling legislation and compatible land use regulations into their land use planning and control processes;
- Partnering with communities and other eligible entities to protect land by establishing restrictive use and conservation easements to prevent encroachment on air installations from degrading training, testing, and operations; and
- Integrating compatible land use strategies into the test and training range environment for operational noise and safety.

DoDI 4715.24 – The Readiness and Environmental Protection Integration Program and Encroachment Management

The REPI Program promotes long-term compatible land use and military installation resiliency in the vicinity of, or ecologically related to installations, ranges, associated facilities, range infrastructure, and airspace from incompatible development and other encroachment threats.

AFI 32-1015 – Integrated Installation Planning

Integrated installation planning guides the Air Force planning portfolio by establishing roles and responsibilities for installation and environmental planners in sustainable development, mission and environment, installation resiliency, and implementing the DoD's AICUZ and Operational Noise Programs. Integrated planning leverages available facilities, services, and resources, both on and off the installation, and promotes relationships with local communities and integration of the mission with local governments.

Noise

Noise Control Act

The Noise Control Act of 1972 identified that noise that is not adequately controlled could endanger people's health and welfare. It states that all Americans are entitled to an environment free from noise that can jeopardize their general health and quality of life. Along with state, local, and territorial governments, actions from the federal government were needed to ensure that the objectives of the Act were met. Concurrently, military installations were experiencing the impacts of encroaching urban development adjacent to the installations and the resulting complaints regarding noise from military flight operations. In 1973, the DoD responded by establishing the AICUZ Program.

The Noise Control Act and the AICUZ Program are important because encroaching development and increased population near military installations often create compatibility concerns. As communities grow, the military installations, developers, and communities must work together to mitigate the issue of noise and develop ways to coexist compatibly.

OLDCC's Community Noise Mitigation Program

The Community Noise Mitigation Program is designed to address communities impacted by military fixed-wing aviation noise for installation noise mitigation at covered facilities. Covered facilities are hospitals, daycare facilities, schools, facilities serving senior citizens, and private residences.

Authorized under the Consolidated Appropriations Act, 2022 (Pub. L. 117-35) Section 8120, the program provided \$75 million to remain available for obligation until September 30, 2025. The funds must be expended by five years after that obligation. The funds are allocated with \$56.25 million to active-duty military installations and \$18.75 million to Reserve component installations, of which \$5 million shall be for communities near a military installation that has transitioned to a new aircraft type after January 1, 2019. Fund requests can include meeting the federal match requirements under the Federal Aviation Administration Part 150, Airport Improvement Program, as needed.

Entities eligible to receive a grant include state and local governments. Eligible Community Noise Mitigation projects are any covered facility:

- that is located off a military installation;
- that is within communities impacted by fixed-wing military aviation noise;
- that is located within one mile of a military installation or another location where military aircraft are stationed, as determined by the DoD or FAA noise modeling programs, or within a noise contour of 65 dB DNL or greater; and
- that is construction-ready.

Department of Housing and Urban Development Noise Regulation

The United States Department of Housing and Urban Development (HUD) has instituted policies through Title 24 CFR Part 51 that promote state and local controls and standards for community noise abatement. The department aims to reduce noise levels within HUD-funded residential developments.

DoD Operational Noise Manual

The Operational Noise Manual was prepared for DoD by the U.S. Army Center for Health Promotion and Preventive Medicine and released in November 2005. It provides a practical guide for military and civilian personnel with duties and responsibilities in operational noise management so that they can work together to be good neighbors and mitigate noise issues. The manual assists personnel in understanding and implementing current DoD environmental policy and guidance. Most of the manual is devoted to the following subjects: characteristics of sounds, effects of noise, military noise sources, noise monitoring, and reduction of noise conflicts.

DoDI 4715.13 – DoD Operational Noise Program

The DoD's Operational Noise Program seeks to minimize the effects of military noise on the environment while maintaining military readiness. Services will analyze and incorporate military noise and noise management into comprehensive planning documents, environmental reviews, determinations, and decisional documents following applicable federal laws, regulations, and DoD guidance.

AFM 19-10/TM 5-803-2/NAVFAC P-970 – Planning in the Noise Environment

The fundamental goal is to protect individuals from noise levels that may jeopardize their health and welfare while facilitating the defense mission. Therefore, planning in the noise environment was developed as a procedural tool designed to aid in developing acceptable noise environments for facilities on military installations or individuals concerned with the noise environment outside the fence. Planners should use the manual to provide an awareness of operational noise that may be expected to occur over a proposed or existing development. The document presents guidance for selecting sites for new facilities within existing or anticipated future noise environments. It discusses noise reduction techniques that may be applied to render marginally acceptable locations suitable for use. The guidelines presented are consistent with the AICUZ Program and land use recommendations generally accepted by the planning community.

Safety and Security

Department of Defense Minimum Antiterrorism Standards for Buildings (UFC 4-010-01)

Unified Facilities Criteria (UFC) 4-010-01 sets DoD minimum security standards for use in facility and master planning. The purpose of these standards is to provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks based on the specific protection needs of individual installations and facilities. Required security measures, such as allowable standoff distances, vary relative to facility siting within a controlled perimeter or on an open installation.

Air Force Playbook for Foreign Investment Assessments Proximate to Military Equities

The Air Force published this document in 2023. The playbook is designed to inform and educate installation staff and surrounding local governments on protocols for obtaining critical information and identifying and addressing potential concerns related to foreign investment transactions near Air Force installations and training and testing areas. This playbook assists in the flow of information for transaction review by the Committee on Foreign Investment in the United States. This federal interagency committee is charged with reviewing certain transactions involving foreign investment in the United States and certain real estate transactions by foreign persons to determine the effect of such transactions on the national security of the United States.

Other

Defense Community Infrastructure Program

Piloted in 2019, the Defense Community Infrastructure Program allows the DoD to fund state and local governments for off-base infrastructure projects to support military installations. The program authorizes the department to fund projects that address deficiencies in community infrastructure if the assistance will enhance the military's value, its resiliency, or the quality of life of military families.

Eligible community infrastructure projects are any complete and useable transportation projects; community support facilities (e.g., school, hospital, police, fire, emergency response, or other community support facility); and utility infrastructure projects [e.g., water, wastewater, telecommunications, electric, gas, or other utility infrastructure (with necessary cyber safeguards)] that:

- are located off a military installation;
- support a military installation;
- are owned by a state or local government or a not-for-profit, member-owned utility service;
- will enhance military value, military installation resiliency, and/or military family quality of life at the supported military installation (definitions of these enhancements are provided in Section E, Paragraph 1 of the Notice of Funding Opportunity);

- are endorsed by the local installation commander representing the installation that will benefit from the proposed project; and
- involve ground-disturbing work that has not yet commenced but is construction-ready.

The availability, reliability, and security of electrical, water, and fuel resources and supporting infrastructure are critical for installation resiliency and continuity in case of events driven by climate change.

Department of Defense Climate Adaptation Plan

The 2021 Climate Adaptation Plan builds upon the actions and activities outlined in the DOD 2014 Climate Change Adaptation Roadmap (DoD 2014b) and meets the requirements of Section 211 of Executive Order (EO) 14008, Tackling the Climate Crisis at Home and Abroad. The Council on Environmental Quality (CEQ) subsequently indicated that the primary purpose of this Plan is to “integrate climate change adaptation and climate resilience across agency programs, management of real property, public lands and waters, and financial services.”

DoD policy (DoD 2016a) states that all operations, planning activities, business processes, and resource allocation decisions must include climate change considerations. The purpose of doing so is to ensure the military forces of the United States retain operational advantage under all conditions, leveraging efficiency and resiliency to ensure DoD forces are agile, capable, and effective. Climate change adaptation must align with and support the Department’s warfighting requirements. As no entity has the luxury of “opting out” of the effects of climate change, no portion of the Department — not a Service, a Command, or an activity — can opt out of the requirement to adapt to a changing climate. Every element in the Department should consider appropriate ways to align their work with the initiatives and activities contained within this document.

Intergovernmental Support Agreements

Intergovernmental support agreements (IGSAs) are formal public-public partnerships between the military and state or local governments. The purpose of IGSAs is to provide, receive, or share installation support services. IGSAs can create efficiencies for the military to enhance mission readiness and are an effective partnering strategy. The IGSA statute (10 U.S.C. § 2679) authorizes such agreements based on a determination that the agreement will serve the department’s best interests by creating efficiencies or economies of scale, including reducing costs or enhancing mission effectiveness. The law also states that IGSAs are not subject to other provisions of law governing the award of federal government contracts for goods and services. In addition, IGSAs may be entered into on a sole source basis with a state or local government and may use wage rates paid by that state or local government.

At the same time, there are limitations on the use of IGSAs. Specifically, any installation services obtained through the state or local government must already provide an IGSA for its own use, and any contract awarded by the federal government or by a state or local government, according to an IGSA, must be awarded competitively. In addition, IGSAs cannot circumvent the Office of Management and Budget Circular A-76 requirements, which govern competitions to determine whether government employees or private contractors should perform commercial activities. Finally, IGSAs are statutorily limited to a term of no more than 10 years, but the statute does not preclude their renewal after the initial agreement period ends.

Department of Air Force Policy Directive 90-22 – Air Force Community Partnership Program

The Air Force Community Partnership Program focuses primarily on enhancing mission effectiveness, creating efficiencies or economies of scale, and improving the quality of life for military members and their families while providing mutual benefit to an installation and its surrounding community. The effective development, management, implementation, and evaluation of such partnerships support the mission of WPAFB and its partner communities, enhancing mission viability and quality of life for the local communities.

Air Force Instruction 90-2001 – Mission Sustainment

The Air Force Mission Sustainment Program preserves and protects military readiness by mitigating or preventing current and potential risks caused by hazards within the installation complex and mission footprint. The Mission Sustainment Program comprises various Air Force programs – AICUZ, REPI, Operations, Public Affairs, and other relevant programs at each specific base that discuss topics and address compatibility issues inside and outside the fence.

5.2 State Laws, Regulations, and Programs

State authorities are required to follow federal statutes and regulations, which are administered through state agencies. Additionally, states commonly enact supportive legislation to enhance protections for the environment, development, or military installations. State governments can also allow regional and local jurisdictions to enact regulations and programs to protect certain areas. States generally encourage industry development and expansion in their respective communities and promote economic growth through state-sponsored developmental organizations and programs.

Ohio has no laws or regulations governing land use around military installations. However, the State allows regional authorities, counties, and cities to adopt ordinances and regulations to protect land use around military installations.

5.3 Installation Studies and Programs

Military installation development and management plans guide land use and development activities on bases and sometimes on land adjacent to installations. These tools principally guide land use decisions within the boundaries of installations or mission footprints and are instrumental in assisting and guiding land use decisions regarding base operations.

Air Installations Compatible Use Zones Study, 2022

The AICUZ study for WPAFB was developed in 2022. The AICUZ study aims to help communities plan compatibility around the installation's noise, safety, and imaginary surfaces. The program recommends land use controls within noise zones, accident potential zones, and vertical height of structures within the area surrounding Wright-Patterson AFB. The AICUZ Study provides a land use compatibility analysis for these factors. The AICUZ also considers bird/wildlife aircraft strike hazards, electromagnetic interference, lighting, smoke, dust, and steam within the Hazards to Aircraft Flight Zone. The AICUZ maps were provided as a starting point for this CUP.

Integrated Natural Resource Management Plan, 2021

The 2021 INRMP was developed in compliance with the Sikes Act to guide natural resource management consistent with the Air Force's mission. The INRMP implements an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner consistent with the military mission; integrates and coordinates all natural resources; provides for sustainable multipurpose uses of natural resources; and provides public access for use of natural resources subject to safety and military security considerations.

Installation Development Plan

The WPAFB Installation Development Plan is the installation's planning document for future development, real property, and facility projects on the installation for the next 20 to 30 years. The Plan aligns with the strategic vision for the installation and includes a planning vision for facilities in Areas A and B.

5.4 Local Regional Tools

Regional economic, residential, and transportation needs span large geographic areas that include military installations. While the military is a stable economic contributor, it is not the sole provider for many regions. However, development forces driving regional expansion are interwoven with military installations. Military operations can negatively impact incompatible land uses within surrounding communities while also being a regional economic engine. This conflict is mitigated by utilizing regional and local ordinances, organizations, plans, programs, and studies to build collaborative partnerships that identify opportunities to enhance community growth and protect existing and future military mission sets.

Organizations and Regulations

Miami Valley Regional Planning Commission

Since 1964, the MVRPC has provided planning services to southwest Ohio. The MVRPC promotes collaboration among communities, stakeholders, and residents to advance regional priorities and serves as a common ground where area partners work toward a shared vision across the region.

Web Page: <https://www.mvrpc.org/>

Wright-Patterson Regional Council of Governments

The WPRCOG comprises the Cities of Dayton, Fairborn, Huber Heights, Beavercreek, and Riverside, as well as Bath Township. The WPRCOG was formed out of a mutual interest and desire to promote compatible development and activities supporting the continued operations of WPAFB and Springfield Air National Guard Base. Through cooperation and coordinated powers and duties, WPRCOG members provide residents with improved efficiency and the sharing of benefits and costs for regional economic development and land use planning while supporting the military. The authority of the WPRCOG is limited to the objectives as approved by the WPRCOG Board of Directors. It shall not interfere with any independent authority of any member community or political subdivision.

Web Page: <https://wright-pattcog.com/>

DaytonDefense

DaytonDefense is a nonprofit industry association based in Dayton, Ohio, that promotes regional economic development for local defense contractors, WPAFB, and the federal sector. DaytonDefense works with defense businesses and professionals in Dayton and is committed to integrating and promoting the business interests of Dayton-area defense contractors, aligned with the interests of all those who live and work in the Dayton area.

Web Page: <https://daytondefense.org/>

Dayton Development Coalition

The Dayton Development Coalition's mission is to recruit, retain, and expand job opportunities in the Dayton region. The Coalition collaborates with local, state, and federal partners in advancing the region's economic priorities. It is a regional network partner for JobsOhio. In 2022, the Coalition released Wright-Patt 2030, a plan outlining the region's strategic efforts to grow and retain military missions, encourage community partnerships, and grow industries supporting the base.

Web Page: <https://daytonregion.com/>

Dayton Region Military Collaborative

The Dayton Region Military Collaborative (DRMC) provides a discussion platform for military-community communication. Members share the status of their initiatives and provide an easier way to reach key stakeholders. The DRMC platform allows the military and the community to work together to address common opportunities and challenges while exploring and supporting partnership efforts for win-win situations.

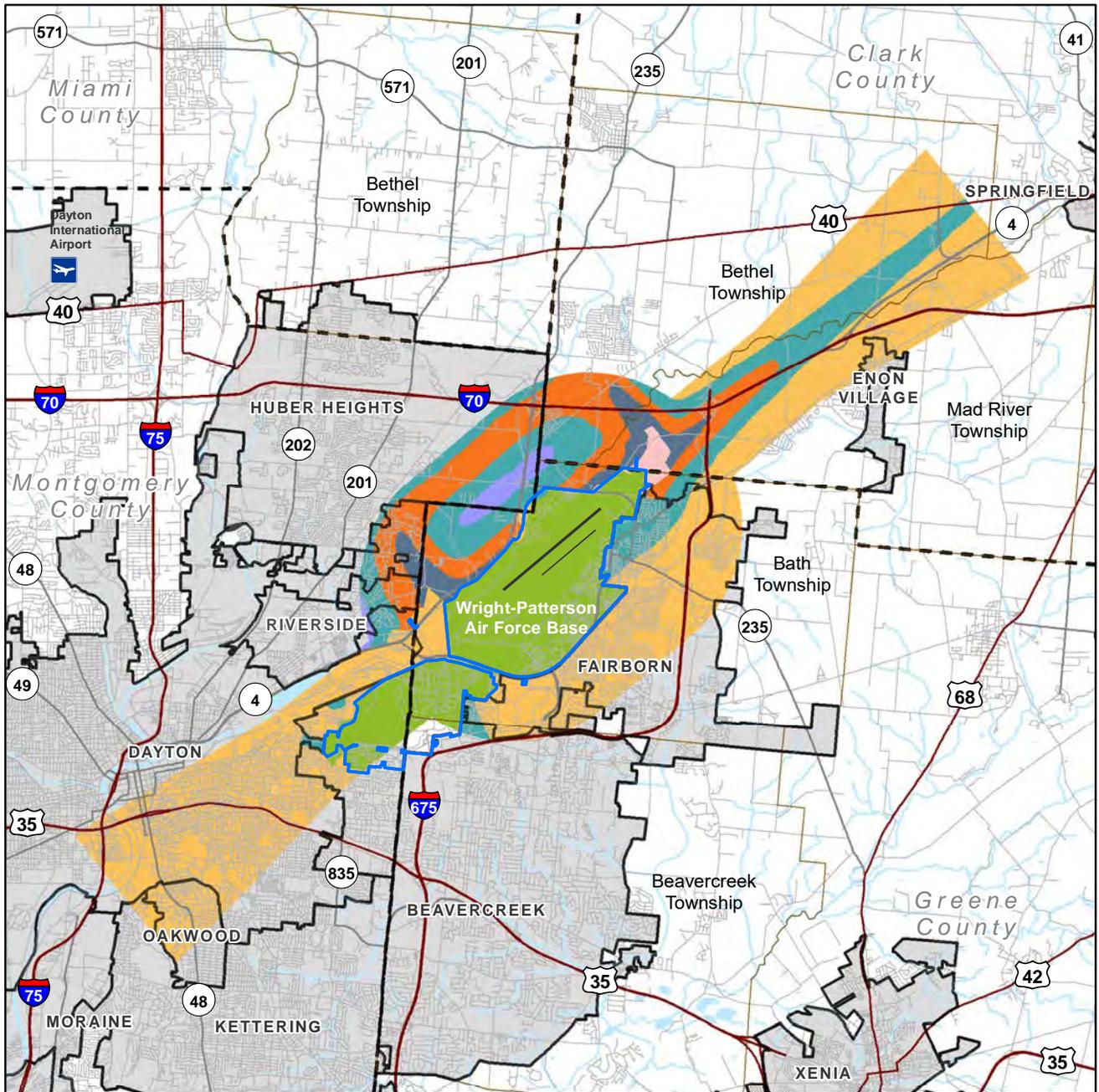
Web Page: <https://www.collaborationdayton.org/>

Wright Patterson AFB Joint Land Use Study, 1996

The WPAFB Joint Land Use Study (JLUS) was developed in 1996 in collaboration with community residents, WPAFB leaders, stakeholders, and local officials. The Study aimed to ensure the vitality of Clark and Montgomery Counties and regional jurisdictions and encourage a successful partnership between the jurisdictions and the installation.

Wright-Patterson AFB Airport Zoning Regulations, 1997

The document provides land use regulations within six defined zoning districts, referred to as the Airport Overlay Zoning Districts, surrounding WPAFB. These districts consist of land use and construction requirements in addition to the zoning of the local jurisdictions. When a parcel falls within more than one district with differing requirements, the most stringent requirement applies.



Airport Zoning Districts

- District 1 – Runway Protection Zone
- District 2 – 75 to 79 dB DNL Noise Contour
- District 3 – 70 to 74 dB DNL Noise Contour
- District 4 – 65 to 69 dB DNL Noise Contour
- District 5 – Built-Up Areas
- District 6 – Federally Owned Public Lands
- N/A - Not Applicable

- Wright-Patterson AFB
- City Boundary
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Local Road
- Runway



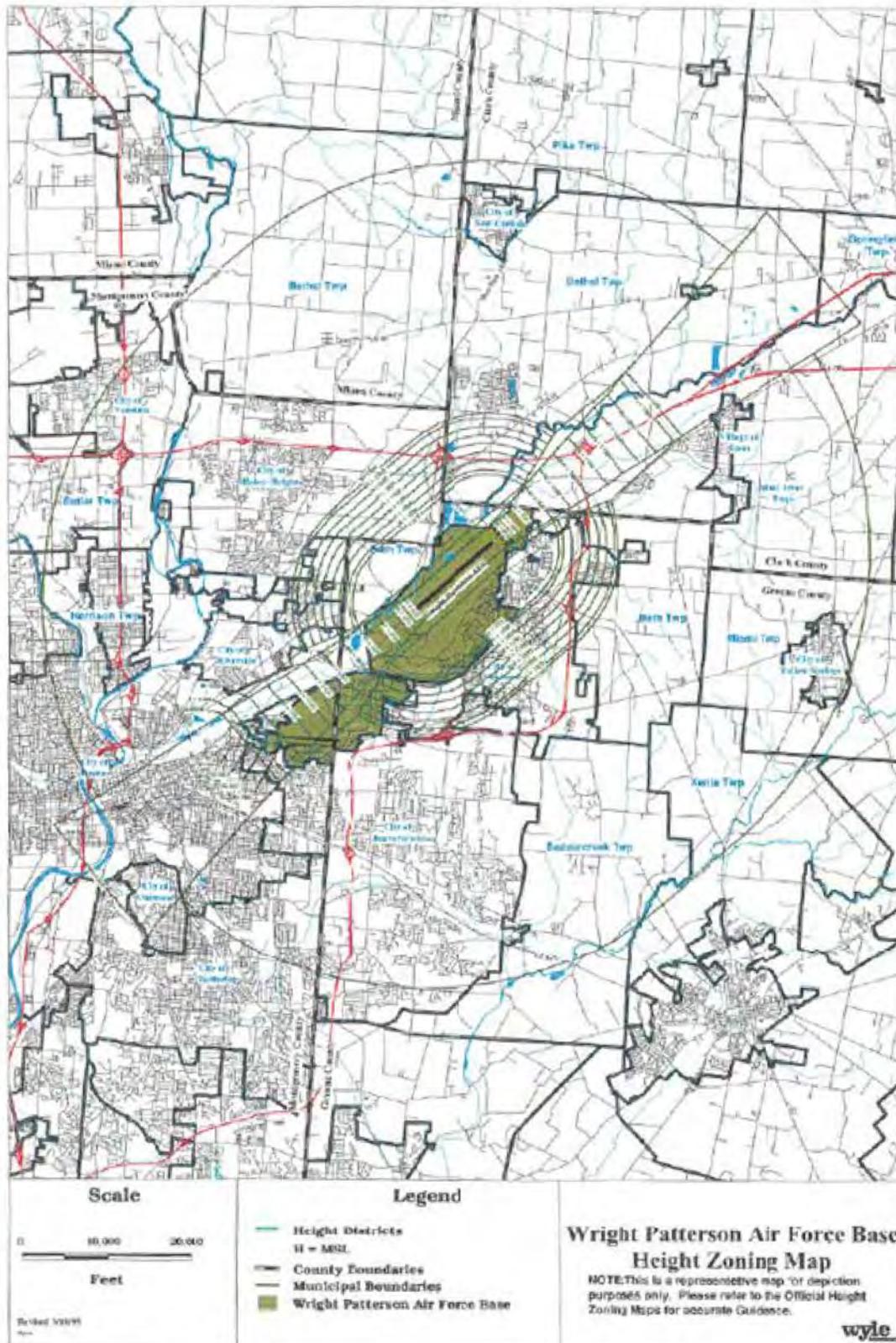
Source: Wright-Patterson AFB Airport Zoning Regulations, 1997. (Digitization) Matrix Design Group, 2023.



Figure 5-1 Wright-Patterson Airport Zoning Districts

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Figure 5-2 Wright-Patterson AFB Height Zoning Map



Ordinances and Plans

In Ohio, cities and counties regulate land uses through various planning efforts, such as comprehensive plans and zoning ordinances. Table 5-2 summarizes each jurisdiction’s planning documents and planning regulations related to military compatibility. The sections that follow the table provide additional information from the documents.

Table 5-2 Assessment of Local Tools to Address Compatibility

Jurisdiction	Comprehensive Plan	Zoning Code: Density	Zoning Code: Height Restrictions	Zoning Code: Lighting	Zoning Code: Sound Attenuation
City of Beavercreek	■	■	□	□	□
City of Dayton	■	■	■	■	■
City of Fairborn	■	■	■	■	■
City of Huber Heights	■	■	■	■	■
City of Riverside	■	■	■	■	□
Bath Township	■	■	■	■	■
Beavercreek Township	■	□	□	□	□
Clark County	■	■	■	□	■
Greene County	■	□	■	□	■
Montgomery County	■	□	■	□	■

Legend:

- The tool exists and addresses land use issue(s) related to military compatibility.
- The tool is utilized but does not address land use issue(s) related to military compatibility.
- The tool is utilized but only partially addresses land use issue(s) related to military compatibility.
- The jurisdiction does not employ this tool.

Local Comprehensive Plans

A comprehensive plan provides an overview of a community's history, current condition, and future vision. Comprehensive plans present a vision for the community's future highlighted by goals and objectives that the community seeks to implement within 20 years of publication. Comprehensive plans often address economic development, housing, implementation strategies, infrastructure, land use, recreation, transportation, utilities (such as water, electricity, and sewer), and zoning. Details within each comprehensive plan, if available, that account for or address WPAFB as a distinct neighbor, district, or character area are shown below.

City of Beavercreek

Though the city has a Land Use Plan, it does not have a Comprehensive Plan.

City of Dayton

Dayton's CitiPlan 2020 vision from 1999 does not include a planning vision or district around WPAFB.

City of Fairborn

Fairborn's 2016 Comprehensive Plan seeks to promote neighborhood and corridor improvements to WPAFB employees, families, and visitors through the following initiatives:

- Provide a competitive residential and commercial community that supports the installation needs.
- Seek to limit heights to ensure buildings do not impede aircraft operations at WPAFB.
- Create a partnership between WPAFB and the City of Fairborn.
- Identify and provide the necessary goods, services, and programs for WPAFB staff, families, and visitors in the downtown.
- Develop marketing materials specifically for attracting WPAFB personnel and visitors into downtown Fairborn.
- Identify and provide the necessary goods and services for WPAFB staff, families, and visitors in the downtown core and along the Broad Street corridor.

City of Huber Heights

Huber Heights' most recent Comprehensive Plan dates from 2011 and does not include compatible planning for WPAFB imaginary surfaces. The city is updating its Plan.

City of Riverside

Riverside's most recent Comprehensive Plan Update became effective in September 2023. The Plan acknowledges the City's participation in the WPCOG and its role in growing and maintaining missions at WPAFB. The Plan also establishes an Air Force District for areas of WPAFB adjacent to the City.

Bath Township

Bath Township leverages the Land Use Plan *Perspectives 2040* and utilizes the six established goals:

- Protect Farmland
- Preserve Natural Resources
- Revitalize Existing Communities
- Focus on Strategically Balanced Land Development
- Expand and Diversify the Local Economy
- Enhance Quality of Life

Beavercreek Township

The Comprehensive Plan for the Township was updated in 2012. It does not discuss compatible planning around WPAFB.

Clark County

Clark County has a Comprehensive Plan that was updated in 2018. It promotes compatible land use around WPAFB.

Greene County

Greene County employs a Land Use Plan instead of a traditional comprehensive plan. Its land use plan, *Perspectives 2040* was adopted in August 2023. It builds upon the success of previous planning efforts that began in the late 1970s and the previous document, *Perspectives 2020*. The focus of *Perspectives 2040* is to continue strategies that work and implement new strategies and concepts to manage future land use.

It includes Implementation Strategy #5, which is labeled "Encourage compatible land-use decisions around WPAFB," with the goal of "Expand and Diversify the Local Economy."

Montgomery County

Montgomery County's Comprehensive Plan does not include a planning vision or district around WPAFB.

Local Ordinances

Local ordinances, development codes, and zoning codes regulate land uses and can be effective tools for implementing policy to support military-community compatibility. This can be done by regulating the types of land uses in the jurisdiction and factors related to such land use, including density/intensity, lighting, heights, and sound attenuation. These are important factors to consider as they relate to the operations and mission of WPAFB.

While the local communities generally do not have specific language within their comprehensive plans, the 1997 WPAFB Airport Zoning Regulations exist to ensure that the development surrounding WPAFB is compatible with the base. Clark, Greene, Miami, and Montgomery Counties adopted the Airport Regulations. Montgomery County is the lead Airport Zoning Inspector for the regulations, but implementation is delegated to local jurisdictions. The WPAFB Zoning Regulations require compliance with the sound level reduction standards (in Table A of the regulations) for all proposed uses and structures within the zoning districts; restrictions on the height of trees, buildings, and structures; and light and electrical interference limitations.

City of Beavercreek

The City's land use and zoning codes were updated in 2020/2021. However, no land use regulation impacts or impacts WPAFB flight operations.

City of Dayton

Dayton's zoning code was established in 2006 and most recently updated in 2022. There is no mention of planning around land uses impacted by aircraft operations from WPAFB.

City of Fairborn

The City of Fairborn adopted its current zoning code in 2017. Height restrictions exist to ensure safe takeoff and landing of aircraft at WPAFB. The code seeks to limit aviation hazards presented by structures built within the flight path of the runways at WPAFB; consultation with the WPAFB Zoning Board is required to maintain “general conformity with regulations governing ‘Aircraft Approach and Airspace Areas.’” The zoning code requires outdoor lighting to comply with outdoor lighting requirements.

City of Huber Heights

Huber Heights republished its City Code in 2019. This regulation includes: “...The proposed development meets all ...[WPAFB] height or abatement requirements.”

City of Riverside

The City of Riverside’s zoning regulations reference compatibility with WPAFB concerning the heights of structures.

Bath Township

Bath Township’s current zoning regulations were certified in 2008. Height restrictions exist to ensure the safe takeoff and landing of aircraft at WPAFB. Wireless communication towers under 200 feet in height must comply with FAA/WPAFB guidance. The Township has adopted the WPAFB Airport Zoning Regulations to “...ensure appropriate density and noise building techniques are implemented.” This ensures that neither the Township nor the installation encroaches/impacts the approved uses within the Regulations. All requests for zoning changes, variances, conditional uses, and zoning certificates in the Township must conform to the Regulations. Montgomery County’s Chief Building Inspector is responsible for zoning administration and enforcing the Regulations.

Beavercreek Township

The Township does not have code provisions that address compatibility with WPAFB.

Clark County

Zoning in Clark County is delegated to the cities and townships. The respective cities and townships discuss any applicable zoning code provisions relative to compatibility with WPAFB.

Greene County

Zoning in Greene County is delegated to the cities and townships. The respective cities and townships discuss any applicable zoning code provisions relative to compatibility with WPAFB.

Montgomery County

Zoning in Montgomery County is delegated to the cities and townships within its boundaries. The respective cities and townships discuss any applicable zoning code provisions relative to compatibility with WPAFB.



6

Compatibility Assessment

Compatibility can be defined as the balance, or compromise, between community needs and interests and military needs and interests in relation to military readiness.

The goal of compatibility planning is to promote a collaborative environment in which community and military entities communicate and coordinate to identify and implement mutually supportive actions that allow both parties to achieve their objectives. This collaborative approach provides the context for developing and recommending policies and actions through a CUP Implementation Plan.

This chapter identifies compatibility issues and provides technical background on the findings relevant to the CUP.



6.1 Assessment Overview

A compatibility issue is a matter that impacts, hinders, or presents an obstacle to current or future military missions or nearby communities. These issues often require collaborative action to be prevented, resolved, or mitigated. This chapter assesses compatibility issues – or challenges – identified during the development of the WPAFB CUP. Compatibility issues may originate in nearby communities and could impact, hinder, or adversely affect military missions. Conversely, compatibility issues may arise on military installations and adversely affect nearby communities. Additionally, this CUP identifies best practices. Best practices are tools and strategies that project stakeholders can actively employ to ensure current and future compatibility with military missions. This chapter provides information for stakeholders to be sufficiently aware of and knowledgeable about the compatibility issues and best practices for the Project Area and the surrounding communities and military resources.

The CUP assessed 24 factors to discover potential compatibility issues, which are detailed in this chapter. The CUP Project Team used several variables to determine whether military and community plans, programs, and activities are compatible or in conflict. The compatibility issues were identified through:

- Meetings with the Steering Committee,
- Public workshops, and
- The technical evaluation and experience of the Project Team.

Throughout the development and before the publication of the WPAFB CUP, opportunities for additional stakeholder input were made available on the project website and at stakeholder events.

The compatibility assessments in this chapter provide foundational information for stakeholders and readers for the strategies presented in Chapter 7. Strategies offer specific, viable recommendations to mitigate or prevent encroachment. The information provided may also guide stakeholders in developing solutions beyond the implementation strategies.

Compatibility Factor Overview

Several variables determine whether military and community activities, plans, and programs are compatible or incompatible. For the WPAFB CUP, 24 compatibility factors were used to identify challenges, opportunities, and solutions within the Project Area. These compatibility factors are categorized into social, resource, and development. The compatibility factors evaluated here may have one or more challenges or concerns associated with each specific factor. Some challenges may apply to multiple compatibility factors and require distinct approaches. Other compatibility factors were evaluated but determined not to present specific concerns, issues, or challenges at a level that would impact the mission of WPAFB. Additionally, this chapter presents some compatibility factors as topics of awareness to monitor in the future.

Social factors are an emerging component of compatible use studies and are increasingly important as military installations and defense communities grow together. These factors include communication and coordination among the base and stakeholders and related policies, programs, military family support, and public services such as transportation, education, and access to medical care.

Resource factors account for shared physical or environmental resources that equitably affect military installations and defense communities, such as air quality, or present competing requirements, such as access to clean water or competing land or development interests. Resource factor assessments are fundamental for addressing base and community resiliency and developing collaborative implementation strategies, such as shared infrastructure projects or joint response preparation and planning. Resource factors include conservation, preservation of cultural heritage, environmental protection, and access to open spaces.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Development factors include traditional compatibility factor assessments related to land use, development, the capabilities and capacities of public infrastructure, and the potential impacts of future projects on military installations. They also include public health and safety concerns related to military training and operations, such as aviation safety, noise, dust, light and glare, or vibrations. Conversely, they also consider risks to the safety of military personnel, specifically pilots and aircrew, due to vertical obstructions and/or energy development.

Social Factors

- Communication/Coordination
- Cultural Resources
- Housing Availability
- Public Services
- Public Trespassing

Resource Factors

- Air Quality
- Biological Resources
- Frequency Spectrum Capacity
- Land/Airspace Competition
- Resiliency
- Scarce Natural Resources
- Water Quality/Quantity

Development Factors

- Anti-Terrorism/Force Protection
- Dust/Smoke/Steam
- Energy Development
- Frequency Spectrum Impedance
- Infrastructure Extension
- Land Use
- Light and Glare
- Noise
- Roadway Capacity
- Safety
- Vertical Obstructions
- Vibration

Compatibility Factor Evaluation Methods

This section outlines the methodology used to assess the findings identified in the WPAFB CUP.

The findings in this Plan document the recognized best practices and compatibility issues for the military installation, nearby communities, and project stakeholders.

Findings of best practices currently in use by WPAFB and stakeholders promoting compatibility within the region are highlighted in this report. The assessment of the best practices is intended as a review of the successful measures the community has undertaken to address mission compatibility and how the initiatives can be utilized or expanded for continued success. These best practices are also identified in the CUP Implementation Plan.

Compatibility findings were assessed to ascertain the existing or potential impacts, expressed as the severity of current or future risk posed to the military mission or surrounding communities, or in some instances, both.

Examining compatibility issues involved a comprehensive and inclusive discovery process to identify significant stakeholder issues relative to the 24 factors. During the beginning phase of the Plan, interviews were conducted with key project stakeholders to discuss the CUP process and document any compatibility issues they felt existed or could exist in the future.

Additional compatibility issues were identified through meetings with the CUP Steering Committee, at public workshops, and based on the technical evaluation and experience of the project consultant. Opportunities for additional stakeholder input were provided on the project website and at other stakeholder events throughout the Plan.

Compatibility Factors Evaluated Without Findings

Of the 24 compatibility factors considered, 13 were inapplicable to this CUP based on the lack of issues identified by stakeholders, the public, and the CUP team. These factors are listed below:

- Air Quality
- Frequency Spectrum Capacity
- Infrastructure Extensions
- Public Services
- Scarce Natural Resources
- Frequency Spectrum Impedance
- Legislative Initiatives
- Public Trespassing
- Vertical Obstructions
- Energy Development
- Housing
- Light and Glare
- Vibration

Although no compatibility issues relating to these 13 factors were identified, they are defined and briefly summarized in this section to acknowledge that each factor was considered and evaluated.

Air Quality

Air quality is defined by criteria for air pollutants and hazardous air pollutants regulated at the federal and state levels. For compatibility, the primary concerns are pollutants that limit visibility, such as particulates, ozone, etc., and potential non-attainment of air quality standards that may limit future operational changes or new growth/development at the installation or in the region.

Energy Development

The development of energy sources, including alternative energy sources such as solar, wind, or geothermal, could pose compatibility issues related to glare (solar energy), vertical obstruction (wind turbines and geothermal steam plumes), and radar operations (wind generation). It is in the interest of the military and the communities to collaborate and support alternative energy development for energy security and economic reasons.

Frequency Spectrum Capacity

WPAFB does not directly control frequency spectrum allocation and management. Instead, spectrum management for military installations falls under the purview of the DoD, specifically through its spectrum management authorities. The DoD, including agencies like the 88 ABW Spectrum Manager, coordinates spectrum allocation, usage, and interference mitigation for military operations.

Frequency Spectrum Impedance

Impedance, or interference, pertains to the range of electromagnetic frequencies used for communication and other transmissions, including radio, cellular phones, and television channels. Increasing demand for frequency bandwidth from commercial applications such as cellular phones, computer networks, GPS units, and mobile radios directly competes with the military's existing and future requirements.

Housing

Local housing availability addresses the supply of and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel stationed at an installation and the supply of military family housing provided by the DoD.

Infrastructure Extension

Infrastructure plays an important role in land use compatibility. It can enhance the operations of an installation and nearby communities by providing needed services while eliminating competition for those resources. Conversely, infrastructure can create encroachment issues if facilities are expanded without considering the consequences of future development. Extending or expanding community infrastructure to areas adjacent to an installation can induce growth that may result in incompatible uses and conflicts between a military mission and community activities and needs. Within general planning efforts and through appropriate consideration and guidance, infrastructure extensions can serve as a mechanism to guide development toward appropriate areas, protect sensitive land uses, and improve compatibility between community land uses and military missions.

Legislative Initiatives

Legislative initiatives at the federal, state, and local levels can significantly impact compatibility planning by allowing or restricting local jurisdictions' abilities to control land use and planning activities near military assets. Legislation can prompt changes in state and local laws and ordinances to support the objectives of recommended CUP strategies.

Light and Glare

Light emitted from communities at night can cause excessive glare and illumination, impacting the use of military night vision devices and air operations. Conversely, high-intensity light generated from airfield lighting and needed in military areas may negatively impact an adjacent community.

Public Services

Concerns about public services include the assurance that adequate services such as police, fire, emergency services, parks and recreation, and water/wastewater/stormwater infrastructure are of good quality and available for use by the installation and surrounding communities as the area develops. The supply and demand of these public services during emergency situations is also considered.

Public Trespassing

Public trespassing addresses both intentional and unintentional trespassing on a military installation. The potential for trespassing increases with the proximity of public use areas such as hiking and off-roading areas.

Scarce Natural Resources

Pressure to gain access to valuable natural resources (such as oil, natural gas, minerals, and water) located on military installations, within military training areas, or on public lands historically used for military operations can impact land utilization and military missions.

Vertical Obstructions

Vertical obstructions comprise buildings, trees, structures, equipment, or other features of varying heights that encroach into the navigable airspace used for military operations. Generally, the height and distance of the object from the nearest airfield or heliport are the two primary factors for an object to be considered a vertical obstruction. When located at a certain height and/or in a specific location, these objects can present a safety hazard to the public and military personnel and potentially impact military readiness.

The objects of greatest concern are those closest to an airfield; however, objects reaching 100 feet or more can compromise low-level flight operations by limiting the areas where such operations can occur. These objects can include a range of obstructive features from man-made, such as telephone poles and power lines, to natural, such as tall trees and other features of the land.

Vibration

Vibration is an oscillation or motion that alternates in opposite directions and may occur from an impact, explosion, noise, mechanical operation, or other environmental change. Whether excessive or unusual, vibration may be caused by military, civilian, or industry activities and can disrupt civilian activities and impact quality of life.

6.2 Previous Compatibility Efforts

Perhaps nowhere today is the question of the DoD's landowner responsibility more prominent than at military air installations. Airfields, in general, are viewed as incompatible with all but the most rural regions. However, many airfields exist within thriving communities. Besides the flying activities, which present a high-noise environment and some accident potential, air bases often present many other potential threats to the surrounding community. Extensive munition stockpiles, vast amounts of stored volatile fuels, and conveying pipelines are certainly the most overt. However, the potential effects of noisy ground testing procedures and air, water, and ground pollution, to name a few, are equally dangerous. The DoD is acutely aware of its responsibility to minimize the public's exposure to the hazards associated with air installations while protecting its bases' operational capabilities. Accomplishing this mutual goal is not a simple feat. Instead, it is a complex problem with many dynamic and interactive elements.

The DoD established the AICUZ Program and carried out installation-specific studies to assist local governments in adhering to land use compatibility guidelines. These guidelines are integrated into various community plans, zoning ordinances, subdivision regulations, building codes, and related documents. WPAFB has commissioned and partnered with the community on various compatibility studies in 2022, 1995, and 1975. These studies have served as a resource for the Office of the Secretary of Defense-funded compatibility studies and as springboards to establish and enhance regulations, to set up the Joint Airport Zoning Board, and to be used by the community in land use discussions, policy initiatives, legislative priorities, and funding opportunities.

1975 AICUZ and Introduction of Zoning Regulations

In 1975, following the establishment of AICUZ, the WPAFB Joint Airport Zoning Board was formed. Its purpose was to enforce zoning regulations to prevent incompatible land use around WPAFB. The main aim was safeguarding residents' well-being by ensuring that surrounding areas adhered to appropriate land use compatible with the safety and noise zones. To achieve this, 11 zoning regulation districts were established. These districts combine the accident potential and aircraft noise zones from the 1975 AICUZ Study. The regulations imposed specific, tailored limitations on land use activities within each district.

1995 AICUZ, 1996 Joint Land Use Study, and 1997 Revised Airport Zoning Regulations

The 1995 WPAFB AICUZ update introduced planning noise contours based on a maximum mission set, utilizing the DNL metric. Long-term planning by local land use authorities involves strategies to promote compatible development of current and future land use. AICUZ studies employ planning contours to provide a long-term perspective (typically five to 10 years) on the expected aircraft noise environment during projected aircraft operations. This aligns with the planning horizon used by state, tribal, regional, and local planning bodies. It is worth noting that the 1995 AICUZ Study set a planning horizon of 20 years. Given the long-range nature of planning, the Air Force updates the AICUZ planning contours whenever future missions and operations necessitate changes to the aircraft noise contours.

The 1995 AICUZ Study was followed by the 1996 JLUS, which consolidated the 11 zoning districts into six districts. Like the 1975 zoning regulations, the land use restrictions that applied would stay in place. The JLUS and revised zoning regulations enhanced these regulations by including:

- restrictions on specific facility types,
- restrictions on residential land use, and
- standards for sound level reduction performance in residential and commercial structures.

The adjustments and inclusions saw the land use controls that included restrictions on the following:

- Facility types, such as:
 - Animal hospitals and kennels,
 - Auditoriums,
 - Concert halls,
 - Educational facilities or services,
 - Institutional facilities,
 - Medical and health service facilities,
 - Playgrounds or neighborhood parks,
 - Sports areas,
 - Transient lodging, and
 - Selected commercial and industrial uses.
- Height
- Lights and electrical interference
- Standards for lot coverage
- Standards for the sound level reduction performance of residential and commercial structures
- Construction of residences
- Manufacture and storage of flammable materials

2022 Air Installations Compatible Use Zones Study

The 2022 AICUZ Study for WPAFB is an updated version of the 1995 AICUZ Study. The need for the update arose from several factors, including changes in land use over two decades, regional comprehensive plans, adjustments to the DoD's land use compatibility tables concerning safety and noise, and the Hazards to Aircraft Flight Zone (HAFZ).

Within the AICUZ Study is a generalized land use breakdown assessing the land surrounding the base within the imaginary surfaces, referred to as the HAFZ by Air Force planners. The 2022 AICUZ Study conducted a detailed land use analysis and compatibility assessment within the aircraft safety zones — the CZs and APZs — and the aircraft noise contours. Additionally, the Study evaluated potential future development within the HAFZ around WPAFB. It also identified the current flight paths.

WPAFB assumes responsibility for flight safety, noise abatement, and active participation in existing local jurisdictional land use planning processes as part of its AICUZ Program responsibilities. Air Force policy and guidance stipulate that installation leadership must periodically review current flight operation practices and assess their compatibility with populated areas and other local conditions. Below is a list of actions that **WPAFB has committed to undertaking:**

- Ensure that, wherever possible, air operation planners route flights over sparsely populated areas to reduce the exposure of people and property to a potential accident.
- Periodically review existing traffic patterns, instrument approaches, weather conditions, and operating practices and evaluate these factors related to populated areas and other local conditions. This review aims to limit, reduce, and control the impact of noise from flying operations on surrounding communities.
- Consider the establishment of a community forum between the installation and surrounding stakeholders to discuss land use and other issues of concern; the installation anticipates holding these meetings on an annual basis.
- Schedule land use planning meetings to provide a forum for agencies to discuss future development and address issues that may surface because of new proposals.
- Provide copies of the AICUZ Study to local, county, tribal, and regional planning departments and zoning administrators to aid in the planning process, as well as provide copies to the appropriate state and federal agencies.

The AICUZ Study recommended the below actions for local governments:

- Local government planners should consider AICUZ policies and guidelines when developing or revising city, town, or county comprehensive plans and use AICUZ overlay maps and Air Force Land Use Compatibility Guidelines to evaluate existing and future land use proposals.
- Local governments should modify or update zoning ordinances, as necessary, to reflect the compatible land uses outlined in the AICUZ Study, including the maintenance of the WPAFB Airport Zoning Regulations that are currently in place.

- Local governments should ensure that new development applications or properties applying for a change of use are submitted to WPAFB to assess those applications for potential impacts on defense missions. The WPAFB 88th ABW/PA Office can provide a land use planning point of contact.
- Local governments should review their capital improvement plans, infrastructure investments, and development policies to ensure they do not encourage incompatible land use patterns near WPAFB, with particular emphasis on utility extension and transportation planning.
- Local governments should implement or modify height and obstruction ordinances that reflect and are consistent with current Air Force and 14 CFR 77 requirements, presented in this study as HAFZs.
- Fair disclosure ordinances should be enacted to require disclosure of those AICUZ Study items that directly relate to military operations at WPAFB.
- Where allowed, local governments should require real estate disclosure for individuals purchasing or leasing property within noise zones, CZs, or APZs.
- Local governments should enact or modify building/residential codes to ensure that any new construction near WPAFB has the recommended noise level reduction measures incorporated into the design and construction of structures.
- Government planning bodies should monitor proposals for tall structures, such as wind turbines and communication towers, to ensure that new construction does not pose a hazard to navigable airspace around WPAFB. Where appropriate, they should coordinate with the FAA on the height of structures.
- Local government land use plans and ordinances should reflect AICUZ Study recommendations for development in CZs, APZs, and noise zones.
- Local governments should consult WPAFB on planning and zoning actions that can affect installation operations.
- Local governments should invite Air Force leadership to be ex officio members on boards, commissions, and regional councils addressing long-range development and other planning policies.
- Local governments should encourage the development of a working group of cities, county, and WPAFB representatives to discuss land use concerns and major development proposals.



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The AICUZ recommended the below actions for real estate professionals and brokers:

- They should know where noise zones, CZs, or APZs encumber land near the installation and invite installation representatives to meetings to discuss the AICUZ Program.
- They should disclose noise impacts to all prospective buyers of properties within areas with noise levels greater than 65 dB DNL or within the CZs or APZs.
- They should require the Multiple Listing Service to disclose noise zones and the location of CZs or APZs for all listings.

The AICUZ recommended the below actions for developers:

- They should know where the noise zones and CZs or APZs encumber land near the installation and consult with WPAFB on proposed developments within the AICUZ footprint.
- They should participate in local discussions regarding existing zoning ordinances and subdivision regulations to support the compatible land uses outlined in this AICUZ Study through the implementation of a zoning overlay district based on noise contours, CZs, and APZs.

The AICUZ recommended the below actions for local citizens:

- They should participate in local forums with the installation to learn more about the installation's missions.
- They should become informed about the AICUZ Program and learn about its goals, objectives, and value in protecting the public's health, safety, and welfare.
- When considering property purchases, they should ask local real estate professionals, city planners, and installation representatives about noise and accident potential.

6.3 Compatibility Findings

Social Factors

Social factors assessed are services, identifiable social artifacts and conditions, and governmental factors that may create compatibility issues between the community and the military. Social factors include Communication/Coordination, Cultural Resources, Housing Availability, Public Services, and Public Trespassing.

Three compatibility factors in this category were found to have issues:

- Communication/Coordination
- Cultural Resources
- Biological Resources

Communication/Coordination

Communication/coordination (COM) refers to programs, plans, and partnerships that promote interagency communication and coordination and disseminate information to the public and other stakeholders.

Interagency communication serves the general welfare by promoting a comprehensive planning process that includes all stakeholders. Coordination supports developing and including mutually beneficial policies for local communities and the military in local planning documents, such as comprehensive plans.

Jurisdictions and military installations should proactively offer pertinent and up-to-date information to the public.

This practice ensures that residents and other stakeholders stay well-informed about ongoing activities, fostering confidence and garnering community support.



COM-1

External coordination with WPAFB and tenant organizations needs to be more consistent.

WPAFB's extensive scale, numerous tenants, diverse mission sets, and operational presence can lead to coordination and collaboration challenges outside the fence line.

Communication between WPAFB and communities throughout the CUP Project Area exists and is generally positive. Although good relationships exist between agencies, elected officials, organizations, and WPAFB, communication protocols must be included in city codes or memorandums of agreement. While information sharing benefits all stakeholders involved, informal communication is often based on relations that individuals have with one another.

Most communities in the Project Area do not have formalized communication with staff or leadership at WPAFB to discuss long-range planning goals and visions for community growth. Formalized communication processes will set

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clear roles and responsibilities for how and whom to communicate with within each city and within WPAFB when compatibility issues and concerns arise regarding community growth, collaboration opportunities, or incompatible development.

In that vein, the WPRCOG was established in 2022 and brought together the cities of Beavercreek, Dayton, Fairborn, Huber Heights, and Riverside, and Bath townships. Today, the WPRCOG includes participation from Greene County, the MVRPC, and Wright State University and may grow. Establishing a formal agreement between the WPRCOG and the installation would ensure that lines of communication are understood when there are changes in base leadership and elected officials.

Additionally, military personnel often oversee the various tenants and major WPAFB organizations. Therefore, developing active communication channels and formalizing an agreement that includes coordination protocols, attendees, goals, and maintained/active contact lists will significantly enhance communication, coordination, and collaboration opportunities.

One positive example of a collaboration opportunity is WPAFB and Wright State University's intergovernmental service agreement. The agreement allocates an office and laboratory space in the Neuroscience Engineering Collaboration Building to Air Force researchers, allowing them to work in a facility that houses the region's only advanced magnetic resonance imaging (MRI) scanner dedicated exclusively to research. The partnership strengthens the region as a research, science, and technology leader.



COM-2

No formalized development review process exists.

Many neighboring communities and some regional agencies do not engage in formalized communication with WPAFB regarding development and planning processes. Some communities do engage in formalized coordination with WPAFB, but it is specific to certain types of development. This can result in inconsistent coordination of development proposal review.

WPAFB and the surrounding jurisdictions have formal and informal communication methods to discuss and share information about various topics. One such important topic for coordination is development proposals in the community. While each jurisdiction has formalized processes for reviewing development proposals, these processes do not generally include coordination with WPAFB. Formally integrating WPAFB into existing community development review processes allows WPAFB to identify any potential compatibility issues before development is approved. Currently, the surrounding communities coordinate with WPAFB informally. This informal communication, or limited coordination, can become problematic when building and construction permits are provided that do not

require sound attenuation or that create vertical obstructions or other potential incompatibilities that arise from a lack of formalized communication procedures.

Formalized communication is also important for coordinating land uses with regional planning agencies. Regional and state agencies generally plan for larger areas than cities, which could cover more of the Project Area. The plans and programs that these agencies implement can have an impact on the installation by setting the framework for development to occur. Examples of regional agencies that would benefit from ongoing communication include the MVRPC, which develops regional plans and provides planning support to member communities; the Ohio Department of Transportation, which plans and programs roadway improvements; and the Ohio Public Transit Authority, which plans and programs public transit improvements. Integrating WPAFB into existing regional and state agency planning processes will allow WPAFB to proactively inform regional development decisions before physical development can potentially create compatibility issues.

The WPRCOG provides an open forum to pursue federal and state grants, promote compatible growth, and mitigate encroachment. While it provides a forum for open dialogue between regional communities and WPAFB, there are no codified regulations for communication or coordination between cities, counties, townships, and regional and state planning agencies, and the installation. This may prevent new community and installation staff from understanding compatibility issues or knowing when to consult with the installation/communities if there is potential for compatibility concerns. Additionally, informal communication is discretionary; therefore, there is potential for incompatible development to occur if such developments are not communicated in advance and if WPAFB is not included in the review of development plans.

Formalized communication between the installation and communities should outline roles, responsibilities, and points of contact for communicating development proposals to the installation and methods for installation review, which should include a timeframe for review.



A need exists for greater WPAFB outreach to the public.

COM-3

Residents have noted aircraft noise is an issue for neighborhoods around the base. Additionally, many residents expressed concerns about and a lack of information regarding PFAS compounds stored and used at WPAFB since the 1970s.

WPAFB conducts operations that have the potential to impact the community. As such, it is important that flight operations are communicated to the public often to help answer community members' questions. Ongoing communication will also help limit complaints about nuisances, such as noise. The community receives communications about WPAFB and its facilities through the WPAFB Public Affairs Office (PAO), part of the 88th Air Base Wing. The PAO communicates with the community through various outlets, including press and media releases, social media, and the WPAFB website.

These communication methods are both direct and indirect. The PAO provides community notices through news releases for certain operations occurring at WPAFB facilities. For example, the PAO provides notifications when air shows or other non-recurring flight activity occurs at WPAFB. The PAO could send these releases to local municipalities to post on their respective websites and publish them on the WPAFB website.

The PAO also sends releases to media contacts, distributing information through their respective media outlets. These outlets include newspapers, local TV stations, local radio stations, and local magazines. In addition to press and media releases, the PAO uses social media to communicate information to communities. WPAFB has Facebook, Instagram, and X (formerly Twitter) accounts. In addition to utilizing its social media pages to distribute information, the PAO reaches out to local municipalities to post WPAFB-related content on their social media platforms. The WPAFB website also serves as an outlet for disseminating information, resources, and notices to the community inside and outside the base.

WPAFB has stored and used Per- and Polyfluoroalkyl Substances (PFAS) since the 1970s, primarily as Aqueous Film Forming Foam (AFFF). The foam was used as a fire suppressant to combat fuel fires. The product was stored in tanks inside hangars and on firefighting vehicles.

Congress enacted the 2020 National Defense Authorization Act in response to public concern surrounding PFAS contamination by issuing several directives, including a provision requiring the DoD to phase out AFFF at all military installations by October 1, 2024. In response, the Air Force established an AFFF Sundown Policy outlining its plan to lock out and tag out all AFFF hangar systems.

Residents may be unaware of the actions taken by WPAFB to remove existing supplies of AFFF and protect areas susceptible to groundwater intrusion. There are also cutting-edge processes under development and in various stages of implementation that show promise in removing PFAS compounds in groundwater. Such positive stories and status updates could be hosted on a dedicated web page.

A dedicated web page for each issue will support transparency and stewardship as good neighbors to support greater awareness. WPAFB can establish a web page with up-to-date PFAS information, publicizing existing and completed actions taken by the base would alleviate concerns, increase transparency, and allow community members to become involved and educated on the condition of the water supply, cleanup efforts, and the potential short- and long-term impacts of toxic PFAS compounds.



Collaborate on the implementation of CUP recommendations.

COM-4

Implementing the CUP recommendations will require ongoing coordination and collaboration between equity stakeholders to monitor progress, address potential challenges, and share lessons learned and successes that other CUP partner communities may replicate.

The WPAFB CUP provides strategies (see Chapter 7: Implementation Plan) that identify partners and suggest a timeframe for each recommended strategy. For the recommendations to be successfully implemented, a partnership committee is recommended. Implementation is not part of this OLDCC-funded CUP. However, the OLDCC provides funding for applicants who submit grant proposals for additional follow-on funding for the implementation phase of the recommended strategies in the Implementation Plan.

Collaboration can take place in various ways; the recommended approach is establishing a partnership committee to oversee the Implementation Plan. The implementation phase should take a holistic approach to each strategy and develop an action plan, formulate milestones, and target completion dates for the recommendations. The Steering Committee vetted these recommendations, and they fully support each identified responsible party and corresponding partner(s).

The WPAFB Partnership Committee can guide the jurisdictions, organizations, agencies, and WPAFB in fulfilling the CUP strategies. The Committee should develop a regular meeting schedule, invite additional stakeholders as necessary, and establish an execution timeline to achieve each recommendation. The strategies promote compatible growth around WPAFB and are not all-inclusive. The Partnership Committee can provide a forum where partners prevent additional encroachment or incompatible growth that may arise after publication by providing an open forum to discuss issues beyond the Implementation Plan.



Increase public awareness of the WPAFB Airport Zoning Regulations.

COM-5

Enhance public awareness of the WPAFB Airport Zoning Regulations for transparency, thereby promoting compatible land use and economic development, protecting property values, and strengthening community trust.

Zoning regulations were established in 1975 when Clark, Greene, Miami, and Montgomery Counties created the WPAFB Airport Zoning Regulations comprising 11 zones. These regulations were updated in 1997. The revision was necessary because significant changes in aircraft activity occurred during the intervening period.

It was also motivated by a desire on the part of both WPAFB and the Joint Airport Zoning Board to ensure continued cooperation between the base and neighboring jurisdictions in promoting compatible land use development.

During a review of the existing regulations, all the Counties adopted the zoning and height regulations outlined in the 1997 WPAFB Airport Zoning Regulations. Of the jurisdictions within the six zones, only Bath Township has formally adopted the regulations within its land development code. The City of Fairborn has adopted the height restrictions and requires consultation with the WPAFB Joint Airport Zoning Board to maintain general conformity with regulations governing the aircraft approach and airspace areas.

Because the zoning regulations are adopted at the county level, there is potential for incompatible development as the public or local planning staff may not be fully aware of the existing regulations. Therefore, growth may occur without a clear understanding of the current guidelines. The WPAFB zoning districts can be included in all public GIS websites to allow developers and residents to visually understand the locations pertaining to regulations. Having digital and PDF maps of the existing regulations on accessible platforms allows jurisdictions within the area administered by the Zoning Board to inform potential development proposals upfront and before the project/proposal is submitted. This reduces the duration of the planning staff review process, provides greater awareness, and streamlines the approval process for future development.



Amend the WPAFB Joint Airport Zoning Board for inclusivity.

COM-6

The Joint Airport Zoning Board was established to enact the 1997 Airport Zoning Regulations and has oversight and participation from counties surrounding WPAFB, but it has limited awareness among townships and cities. This can create development challenges for local governments when they provide development guidance.

The four counties that manage the implementation of the zoning regulations defer to the local jurisdiction's planning and review processes — except the City of Dayton, as Montgomery County conducts its own review for compliance with regulations.

The Airport Zoning Board convenes infrequently, typically meeting once a year. Its role includes adopting noise contours and regulations, such as sound mitigation and land use control, and amending them when necessary in collaboration with WPAFB. In the daily application of these regulations within the four-county area, each building regulations department reviews plans for compliance with the WPAFB Zoning Regulations for properties within the six zones. The Board also handles variance requests related to height and noise contour regulations, with each of the four counties having a participating member on the Board.

The noise level reduction requirements are effective across all member counties and uniformly apply to new construction in municipal and unincorporated township lands within the zoning overlay boundaries. Height issues are rare outside the six planning districts. As a result, the Board seldom encounters height or light intrusion issues within the HAFZ. Most reviews primarily focus on residential development within the zones, with plans assessed to ensure correct noise reduction levels before approval.

In 2022, the Wright-Patterson AFB Regional Council of Governments was established. The members of the WPRCOG are not participants on the Board. Amending the Board to include planning directors or senior staff would establish a unified approach to development around the base. Inclusion would also ensure that each planning division fully appraises the existing WPAFB Zoning Regulations. The inclusion of WPAFB in an advisory role, along with the establishment of regular meetings to discuss and document the number of development proposals within the regulated zones will foster an understanding of each proposal and promote compatible growth within the controlled areas.

As discussed in COM-2, "No formalized development review process exists," each jurisdiction would benefit by developing a coordination process that establishes a timeframe for reviewing and providing an assessment of development proposals that may impact operations at WPAFB. This will allow the expanded WPAFB Joint Zoning Board to discuss development trends, record the number of developments approved and proposed, discuss best practices in the region, and maintain uniform guidance for regional developers.

Cultural Resources

Cultural resources are objects, places, and practices that are especially representative of, and/or meaningful to, a specific group of people, their worldview, belief system, or way of life. Cultural resources include pre-contact period and historic-period artifacts, archaeological sites, buildings, structures, districts, and landscapes, as well as historic-period records and photographs. “Historic properties” are cultural resources that are listed or eligible to be listed in the National Register of Historic Places and are protected under the National Historic Preservation Act (NHPA) and other federal and state laws.



CR-1

Enhance public awareness of Air Force-related cultural resources.

Enhancing public awareness of Air Force-related cultural resources, such as the Wright Brothers Memorial and the Air Force Museum is vital to preserving their historical legacy, fostering patriotism and respect, educating future generations, and strengthening community ties to the nation’s military heritage.

Aircraft operations began in the region in 1904, with the Wright brothers flying across Huffman Prairie Flying Field. Over 100 years of storied history exist concerning flight at WPAFB. Today, the birthplace of flight, Huffman Prairie Flying Field, is a historic state landmark and part of the Dayton Aviation Heritage National Historic Park.

While many know where the Wright brothers took off, fewer are aware of the technological innovations and successes in the region’s history. WPAFB was a manufacturing hub and innovation center for WWI and WWII, building planes and aircraft parts that directly led to air dominance during these wars. It has maintained its position as a center of innovation since WWII and continues to contribute to advancements in aviation.

That history is documented inside the many hangars at the National Museum of the Air Force, where over 350 aircraft, missiles, and other historical and cultural artifacts are located, making it the world’s largest military aviation museum. The public has a general understanding of the role the museum plays in preserving this part of aviation history but expanding educational partnerships and STEM-type activities at WPAFB, along with outdoor activities, artifact displays, and retail and dining options, can help the greater WPAFB area become a bigger attraction for residents and tourists alike. Promotion of such offerings through flyers, billboards, social media, and information kiosks could generate additional tourist traffic in the region.

Resource Factor Assessments

Resource factors account for a wide variety of shared physical or environmental resources that equitably affect military installations and defense communities, such as air quality, or that present competing requirements, such as access to clean water or competing land or development interests. Resource factor assessments are fundamental for addressing base and community resiliency and developing collaborative implementation strategies, such as shared infrastructure projects or joint response preparation and planning. Resource factors include conservation, preservation of cultural heritage, environmental protection, and access to open spaces.

Three compatibility factors in the resource factor category were found to have issues:

- Resiliency
- Biological Resources
- Land/Airspace Competition
- Water Quality/Quantity

Resiliency



RES-1

Implement best practices to adapt to the effects of climate change.

The ability of a military base to withstand or adapt to persistent impacts associated with climate change, including severe weather, drought, flooding, and wildland fires, is resiliency. These events can present planning and operational challenges for the military as environments change and resources are depleted, both on installations and in surrounding communities. Resiliency is installation-specific, dependent on enhanced local capacities and redundancies — military and civilian — to ensure the functionality of critical systems and infrastructure and to sustain mission requirements during disasters and their prolonged effects.

Climate change presents a significant challenge that impacts various aspects of infrastructure, resources, and ecosystems, affecting both Wright-Patterson AFB and the surrounding community. The finding that emphasizes implementing best practices to adapt to the effects of climate change underscores the critical need for proactive measures to enhance resiliency in the face of changing environmental conditions.

Understanding Climate Change Impacts: The first step in implementing climate change adaptation best practices is to thoroughly understand the specific impacts of climate change on the region. This includes assessing vulnerabilities related to extreme weather events, temperature fluctuations, and changes in precipitation patterns that could affect water resources, energy infrastructure, transportation networks, and natural habitats.

Integration of Resiliency Strategies: Once the impacts of climate change are identified, integrating resiliency strategies becomes imperative. This involves developing and implementing a comprehensive set of measures that enhance the ability of both Wright-Patterson AFB and the surrounding community to withstand, recover from, and adapt to the effects of climate change. These strategies may include:

- **Infrastructure Resiliency:** Upgrading infrastructure to withstand extreme weather events, improving drainage systems, enhancing building design for energy efficiency and climate resiliency, and incorporating green infrastructure solutions.
- **Water Resource Management:** Implementing water conservation measures, enhancing water storage and distribution systems, developing alternative water sources, and promoting sustainable water use practices.
- **Energy Resiliency:** Diversifying energy sources, investing in renewable energy technologies, improving energy efficiency in buildings and operations, and developing resilient energy grids and microgrids.
- **Transportation Planning:** Integrating climate-resilient transportation planning, promoting alternative transportation modes, enhancing road and transit infrastructure to withstand climate impacts, and developing emergency evacuation plans.
- **Natural Resource Conservation:** Protecting and restoring natural habitats, promoting sustainable land use practices, conserving biodiversity, and managing ecosystems to enhance resiliency to climate change impacts.
- **Emergency Management and Preparedness:** Enhancing emergency response capabilities, developing climate-informed disaster preparedness plans, improving early warning systems, and coordinating response efforts between stakeholders.

Biological Resources

Biological resources include species listed by federal and state agencies as threatened or endangered, along with those species' habitats. Biological resources may also include "species of concern," which refers to organisms that need concentrated conservation efforts and areas such as wetlands and migratory corridors critical to an ecosystem's overall health and productivity. The presence of sensitive biological resources in an area where increased use or development is planned may warrant special considerations and protective measures and should be identified as a concern early in the planning process.



BIO-1

There is a need to continue to preserve and protect natural ecosystems.

Regional growth can increase pressure on natural habitats near WPAFB. These natural areas serve as effective encroachment buffers surrounding WPAFB, and preservation should continue to be a priority to support land use compatibility and resiliency.

WPAFB is built on land donated by the Miami Conservancy District. Parts of the base's land reside within existing floodplains and are limited to development. Therefore, areas within the base are protected habitats. The Natural Resources Program at the base has observed the federally endangered Indiana bat and the Northern long-eared bat. WPAFB strives to increase, maintain, and promote ecosystems where they can thrive. In 2017, the base became the first military installation designated as a Bee City USA community. The base also manages one of the most extensive tallgrass prairies in the region, State Landmark Huffman Prairie Flying Field, which is a stop along the monarch butterfly migratory path. Managing these threatened and endangered species and their habitats on the installation is a major component of the Natural Resources Management Program.

Natural ecosystems are also enjoyed by residents and preserved outside the base at Huffman MetroPark, Eastwood MetroPark, MetroParks Mountain Biking Area, Fairfield Park, Hebble Creek Reserve, and Cemex Reserve, in addition to various other locations.



These undeveloped open spaces support the natural environment's ability to manage floodwaters, support biodiversity, and reduce the potential for incompatible land use around WPAFB.

North of WPAFB is the interchange of I-70 and I-675. The area consists of a significant amount of open space along the Mad River, including agriculture and vacant land use outside and within portions of the safety zones. The federal government provides funding through the DoD and other programs to protect land and limit encroachment on military bases nationwide. One program is the Sentinel Landscapes Partnership, which works with willing landowners and land managers to advance sustainable land use practices around military installations and ranges. Founded in 2013, the Partnership's mission is to strengthen military readiness, conserve natural resources, bolster agricultural and forestry economies, increase public access to outdoor recreation, and enhance resiliency to climate change.

The land north of WPAFB, due to its location along the Mad River and abundant agricultural uses, is a good candidate for land preservation. Preservation can occur through perpetual easements or the donation of development rights — to ensure the land remains undeveloped. The Land Trust Alliance is a resource that provides information on conservation and identifies potential partners to protect the natural ecosystem.

Frequent questions asked by landowners include the following:

- What is an easement?
 - It is a one-time purchase of development rights.
 - It provides a permanent reduction in taxes.
 - Conservation easements are legal agreements between a landowner and a land trust.
 - The easement will permanently protect the land's conservation values by limiting the types of land use.
- Does the land need to become an untouched natural environment?
 - Owners are encouraged to continue to use the land to farm, fish, hunt, and build structures or homes based on the rights reserved in the easement.
 - Perpetual easements restrict certain land uses and purchase the development rights for various agreed-upon development types.

- Can the protected land be sold? Who is the owner?
 - The land belongs to the owner, not the land trust.
 - Each landowner may sell or pass the land on to heirs.
 - The conservation easement remains in effect, and the terms apply to all future landowners.
- How does a land trust protect the land?
 - When entering into a voluntary conservation agreement with a land trust, the agreed-upon terms include the forfeiture of certain development rights.
 - This may include forfeiting the right to build tall structures or subdivide the land while retaining the full right to grow crops, fish, and hunt.
 - The agreement runs with the land and applies to future owners.
 - The land trust ensures the agreement’s terms are followed.

Land/Airspace Competition

The military manages and uses land and airspace for testing, training, and operational missions. These shared resources must be available and of sufficient size, cohesiveness, and quality to accommodate effective training and testing. They can also impact future development and operations for all users.

Civilian, commercial, and military land/air operations can compete for limited available land and airspace – especially when the areas are desirable for military training, recreational use, and residential use and have abundant resources.



The growth of aviation at Dayton International Airport creates airspace competition.

LAS-1

A planned electric vertical takeoff and landing aircraft (air taxi) production facility at Dayton International Airport will increase air traffic in the region.

The company, Joby, received U.S. Air Force airworthiness certification in 2021. It plans to build a facility that delivers up to 500 aircraft annually at Dayton International Airport, supporting up to 2,000 jobs. The 140-acre site it has selected has the potential to support significant further growth over time, providing enough land to build up to 2 million square feet of manufacturing space. Construction on the manufacturing facility will begin in 2024, and production will begin in 2025.

The production aircraft is designed to transport a pilot and four passengers. The aircraft can travel up to 100 miles at speeds below 200 mph, transporting people quickly, quietly, and with zero emissions. The company plans to operate these aircraft as part of aerial ridesharing networks in cities and communities worldwide starting in 2025.

Joby's aircraft, which has already begun flying at Edwards AFB in California, is the first electric air taxi stationed on a U.S. military base and is believed to be the first delivery of an electric air taxi in the U.S. Joby's partnership with the DoD dates back to its 2016 engagement with the Defense Innovation Unit, which granted the company early funding and access to test ranges and expertise that have aided its aircraft development program. Operations at Edwards AFB with Joby aircraft demonstrated a range of logistics missions, including cargo and passenger transportation operated by both Joby and U.S. Air Force personnel. In partnership with the U.S. Air Force, NASA will also use the aircraft for research to determine how they could fit into the national airspace, benefiting the entire air taxi industry.

The State of Ohio, JobsOhio, and local political subdivisions have established incentives and benefits of up to \$325 million to support the development of the facility, while Joby plans to invest up to \$500 million as it scales up operations at the site. Joby is also pursuing U.S. Department of Energy financing under the Title XVII Loan Guarantee Program, which provides access to low-interest loans for clean energy projects and would support the scaling of the facility.

While the company's headquarters, research and development, and pilot production facility will remain in California, aircraft may be flown out of the facility for test proficiency and/or to their destination. The company has communicated well with the USAF and local, state, and federal officials. With the presence of Dayton International Airport within the imaginary surfaces of WPAFB, there is concern that the demand for existing and future air operations at the airport may create airspace congestion and competition. Completing a memorandum of agreement to understand and develop a course of action to mitigate potential flight conflicts between WPAFB, Dayton International Airport and Joby International are advised.



LAS-2

The future proliferation of commercial drones can create airspace conflicts and safety concerns.

As drones transition from emerging technology to everyday commercial use, they can pose operational threats from intentional or unintentional overflight of WPAFB to surveil activities and create potential flight hazards and midair collision risks for military aircraft.

Drones, or UASs, have increased across the U.S. in recent years due to their reduced cost and size and increased availability. As of October 2023, over 863,728 UASs have been registered with the FAA. Approximately 500,000 registered drones are for recreational use, while 350,000 are for commercial use.

Both recreational and commercial drones create security concerns for military personnel and equipment, as many drones have built-in cameras. Drone operations near military installations create security risks for the military if the drone is used to capture video or photographs of federal property, operations, activities, and/or facilities. In addition to these security concerns, risk is associated with improper use of drones near airports, creating potential

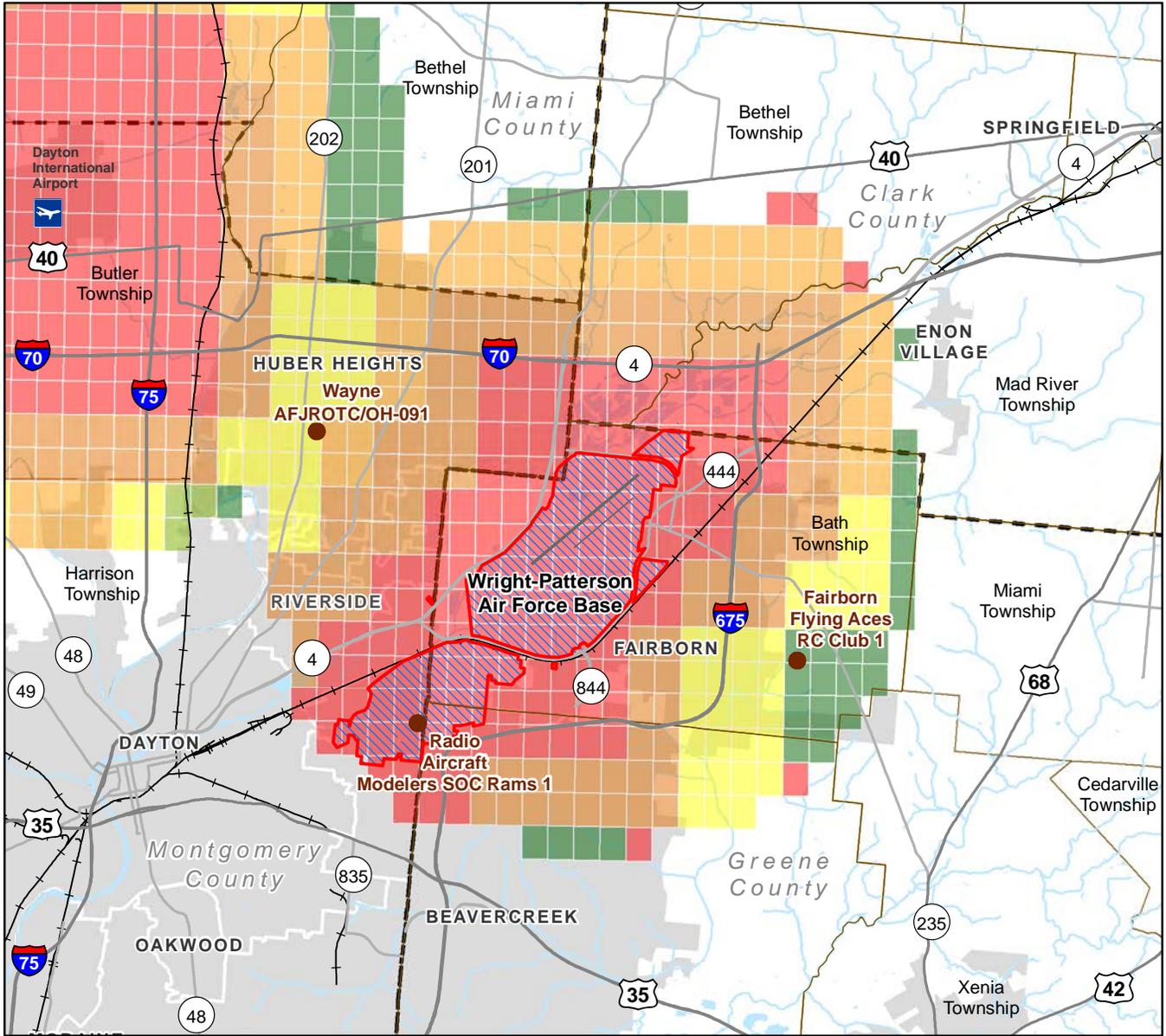
midair collisions and posing a hazard to aircraft safety. Whether these actions are intentional or unintentional, UAS activity is a concern to WPAFB.

The FAA regulates UASs in active airspace and requires that UASs meet certain size and weight requirements to be registered for authorized use. Additionally, the FAA creates no-fly zones, or restricted flight areas, for UASs, such as around airports or over military installations. The FAA also monitors and tracks UASs flying in unauthorized areas. It receives more than 100 reports of unauthorized drone flights a month nationwide.

To provide information and education regarding these restricted areas, the FAA has developed the B4UFLY mobile app. The free app provides information on FAA restrictions and interactive maps to assist drone operators with learning where they can and cannot fly their drones. Through this app, drone users cannot request or obtain airspace authorization to fly in controlled airspace. Authorization to fly in controlled airspace must be approved by the FAA in advance. UAS pilots can submit requests to fly in restricted airspace by visiting <https://faadronezone-access.faa.gov/>. The State of Ohio requires users to follow federal drone laws, and state and local jurisdictions have no additional regulations on the use of drones.

In addition to federal regulations, technology applications, such as geofencing or limiting the range a UAS can fly, can keep UASs out of areas of concern and thereby limit hazards. Geofencing uses GPS or radio frequency identification to create a geographic boundary that location-aware devices avoid. However, few manufacturers have incorporated this technology into their UASs, as the law does not require it. Increasing awareness includes placing signage in state and local parks within imaginary surfaces or HAFZ. Prioritizing areas within the no-fly zone provides additional situational awareness to recreational users. Drone restrictions are shown in Figure 6-1 below.

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Drone Ceiling Altitudes

- Drone Operation Prohibited
- 50 feet
- 100 feet
- 150 feet
- 200 feet
- 250 feet
- 300 feet
- 350 feet
- 400 feet

- National Security UAS Flight Restrictions
- Recreational Flyer Fixed Sites
- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Railroad
- Runway



Source: FAA, 09/2023.



Figure 6-1 Drone Restrictions

Water Quality/Quantity

Water quality/quantity (WQQ) concerns include the assurance that adequate water supplies of good quality are available in the military and surrounding communities to support current and future agriculture, residential, commercial, and industrial growth.



WQQ-1

The antiquated condition of Huffman Dam creates a potential impact to flood control and facility protection.

Huffman Dam is one of five flood control dams built in 1921 as part of the Miami Conservancy District's (MCD) response to the catastrophic Great Dayton Flood of 1913 to protect downstream communities from flooding. Due to its age, the dam needs improvement to ensure it continues to serve its flood control purpose.

The Miami River Valley comprises three converging river systems: the Stillwater, Mad, and Miami Rivers. In 1913, A devastating flood in the Miami Valley resulted in 400 fatalities and \$100 million in damages. Five dams were constructed to prevent future destruction, but this infrastructure is now over a century old.

The flood of 1913 had a profound impact on the way the region planned and executed strategies to protect local communities from future floods. One key outcome was the establishment of the MCD in 1915. The MCD built five earthen dams, with Huffman Dam being the most important to the operational integrity of WPAFB. These dams do not create permanent reservoirs; they temporarily store floodwater from heavy or prolonged rains. It can take weeks to drain the accumulated floodwater fully during periods of extremely high water.

These areas, including the 9,180-acre retarding basin for Huffman Dam, have specific development restrictions and requirements to prevent flood-related issues.



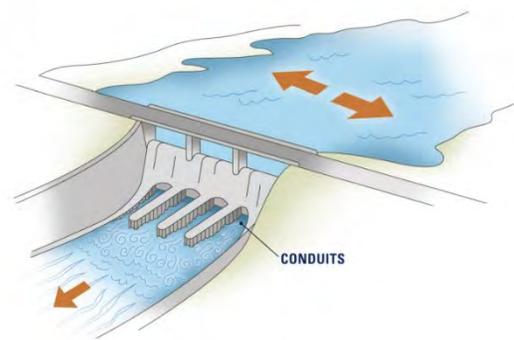
In 1922, the district sold over 3,700 acres of land, making up Area A of WPAFB. The MCD and WPAFB coordinate on the proposed development on land below 835 feet above mean sea level. Flooding in 1959 saw the water level at Huffman Dam reach 809 feet above mean sea level, resulting in flooding that inundated the runway and affected half the base.

1959 aerial of flooding at WPAFB. Source: Miami Conservancy District

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Huffman Dam was constructed to create a retention basin in the valley above it. It spans a 3,340-foot section of the Mad River Valley and stands 65 feet high. Part of the structure is made of Portland cement concrete and includes a spillway positioned directly above three conduits. The spillway crest is situated at 835 feet above mean sea level. In the event of a maximum high-water event, it would likely take weeks to completely drain the retarding basin as the dry dam can store 54.43 billion gallons of floodwater.

Most of the land owned by WPAFB was initially part of the MCD. MCD-designated floodplains and any development within these areas required coordination between the base and the district before construction. These restrictions have ensured that development, if possible, is built outside areas susceptible to flooding. Originally, the MCD requested written permission for any development below 830 feet above mean sea level; today, some facilities exist within the floodplains.



An example of how dry dams operate. Source: The Miami Conservancy District



Huffman Dam conduits and spillway. Source: Miami Conservancy

Changing climate patterns and aging dam infrastructure significantly threaten WPAFB's operational capabilities, potentially damaging the base and surrounding communities.

Concerns about the age of the dams managed by MCD are being raised. Partnerships and funding opportunities are being explored to enhance, repair, and ensure these dams can continue to serve their purpose for 100 more years.

Additionally, changing environmental factors, including increased rainfall frequency and intensity, pose a risk of flooding within the retarding basin, potentially causing damage to facilities and affecting operational capabilities. Assessing and addressing these concerns is essential for effective flood control and facility protection.



WQQ-2

Address public concern over groundwater chemicals from WPAFB.

Public concerns about harmful chemicals potentially leaching from WPAFB into the surrounding groundwater exist. Some of these chemicals, possibly including PFAS, often used in firefighting foams, have been identified as being of particular concern due to their potential health impacts and environmental persistence.

PFAS are a group of man-made chemicals used in various residential, commercial, and industrial applications due to their unique properties that make products resistant to oil, grease, water, soil, and stains. The commercial use of PFAS began in the 1950s, and by the 1970s, the DoD started utilizing PFAS, specifically in fire extinguishing foam. Subsequently, fire departments and airports also adopted the use of these chemicals. In Area A, near the current fire training area, the Air Force is installing a PFAS treatment system to remove PFAS from groundwater, which is expected to be operational in the fall of 2024.

The U.S. EPA published final drinking water regulations in April 2024, establishing maximum contaminant levels for PFAS compounds in public drinking water systems.

In 1988, the City of Dayton received a designation for its aquifer as a “sole source aquifer” under the Safe Drinking Water Act. The aquifer is considered the sole source of drinking water for over 2.5 million residents and businesses in Southwestern Ohio.

PFAS can accumulate and persist in the human body for extended periods. Evidence from laboratory animal and human epidemiology studies indicates that exposure to these compounds can lead to various health effects, including cancer, reproductive issues, developmental concerns (e.g., low birth weight), cardiovascular problems, and liver and kidney complications, as well as immunological effects.

How does the EPA Approach PFAS?

The EPA’s approach is shaped by the unique challenges of addressing PFAS contamination. The EPA cannot solve the problem of PFAS compounds by tackling one route of exposure or one use at a time. Rather, it needs to take a life-cycle approach to PFAS to make meaningful progress.

PFAS pollution is not a legacy issue — these chemicals remain in use in U.S. commerce. As such, the EPA cannot focus solely on cleaning up the downstream impacts of PFAS pollution. The Agency needs to also look upstream to prevent new PFAS contamination from entering air, land, and water and exposing communities.

As the Agency takes tangible actions both upstream and downstream, the EPA will continue to pursue a rigorous scientific agenda to better characterize toxicities, understand exposure pathways, and identify new methods to avert and remediate PFAS pollution.

As the EPA learns more about the family of PFAS chemicals, the Agency can do more to protect public health and the environment. In all this work, the EPA will seek to hold polluters accountable for the contamination they cause and ensure disadvantaged communities equitably benefit from solutions.

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Acknowledging the widespread presence of these PFAS compounds in 2016, the EPA established lifetime health advisory levels for PFAS in drinking water at 70 parts per trillion. Today, the EPA is reviewing the current guidance. It is possible that in the future, manufacturers may be wholly or partially liable for cleanup and mitigation efforts in the future.

In June 2023, the EPA postponed the expected publication of a final rule designating PFAS, along with its salts and structural isomers, as a hazardous substance under the CERCLA also known as the Superfund. This proposed rule aims to enhance transparency regarding releasing these harmful chemicals and hold responsible parties accountable for contamination cleanup. It would mandate immediate reporting of releases of PFAS meeting or exceeding the reportable quantity to various authorities, including the National Response Center, state or tribal emergency response commissions, and local or tribal emergency planning committees. Notably, entities would not be required to report past releases of PFAS since it was not previously classified as a hazardous substance.



PFAS never disappear from the environment, which is why they're called "forever chemicals."

43 states have PFAS-contaminated water, affecting more than 19 million people.

PFAS in firefighting foam (aka AFFF) are a key suspected source of PFAS-contaminated drinking water in Washington.

Almost 100% of Americans have some type of PFAS in their blood.

Department of Ecology, Washington State, accessed Nov. 28, 2023

These PFAS compounds are used in manufacturing a wide array of products. They are incredibly resistant to breakdown, making them long-lasting pollutants in water, soil, and the human body. Their unique properties have led to their use in various products, such as nonstick cookware, fast-food wrappers, and dental floss. Commercially produced PFAS compounds for human consumption and those used and stored by the DoD have migrated into groundwater and drinking water nationwide. Various public, private, and public-private partnerships actively seek solutions to remove these chemicals from drinking water.



Stain- & water-resistance treatments

Nonstick cookware

Waterproof apparel

Cleaning products

Firefighting foam

Takeout containers

Carpets & textiles

Various Common Sources of PFAS. Department of Ecology, Washington State, accessed Nov. 28, 2023

A widely used firefighting foam known as Aqueous Film Forming Foam was one such product. AFFF contained PFAS. The PFAS within AFFF, commonly used in the 1970s, raised concerns about potential health risks. This potential source of contamination at WPAFB stemmed from the use of AFFF stored in tanks inside aircraft hangars and on firefighting trucks. Because these chemicals do not naturally degrade due to their strong chemical bonds, they can migrate into local drinking water wells if not adequately managed. In 2023, to address this issue, WPAFB constructed an interceptor trench system in Area B and an organic clay treatment filter on the base to treat stormwater and groundwater before releasing it into local waterways. The Ohio EPA is participating in WPAFB's water remediation, overseeing the project to ensure it meets state and federal regulations.

The Air Force began to transition to more environmentally friendly foam mixtures in 2017 to reduce or eliminate the use of these chemicals. Presently, the Air Force has implemented these additional measures to minimize unnecessary foam releases:

- Retrofitting all fire vehicles with a switch mechanism to test functionality without discharging AFFF into the environment
- Standardizing hangar systems and replacing older systems containing the old foam formulation during building renovations
- Conducting fire training exercises without AFFF to prevent soil and groundwater impacts
- Treating uncontained AFFF releases as hazardous material spills and mandating immediate cleanup

In July 2023, the Air Force transitioned from the older chemical mixture to a newer, environmentally compliant, and safer alternative. WPAFB has diligently followed the guidance provided by the Air Force and DoD to reduce, mitigate, and, where possible, eliminate exposure to these chemicals. Given the base's proximity to rivers, lakes, and drinking water reserves, it must adhere to existing and future federal requirements for cleanup and restoration efforts.

Development Factor Assessments

Development factors impact or are impacted by economic development, growth, and existing land use. These factors include traditional compatibility factor assessments related to land use, development, the capacities of public infrastructure, and the potential impacts of future projects on military installations. They also include public health and safety concerns related to military training and operations, such as aviation safety, noise, dust, light and glare, or vibrations. Conversely, they also consider risks to the safety of military personnel, specifically pilots and aircrew, from vertical height obstructions and/or energy development.

Five compatibility factors in the resource factor category were found to have issues:

- Anti-Terrorism/Force Protection
- Land Use
- Noise
- Roadway Capacity
- Safety

Anti-Terrorism/Force Protection

Anti-Terrorism/Force Protection (AT/FP) relates to the safety and security of personnel, facilities, and information on a military installation. DoD AT/FP standards require all installation components, such as access gates, to adhere to design/planning criteria and minimum construction standards that mitigate vulnerabilities and threats to an installation and its occupants. Important aspects of these criteria and standards include access control and clearance zones around installation perimeters to maintain sight lines and manage access to the installation. Due to current domestic and global conditions, military installations have implemented more restrictive standards to address AT/FP concerns. These measures may vary based on daily activities and include increased security checks and/or the creation of physical barriers at entry points (e.g., gates, spike barriers, tire shredders).



AT-1

Address potential impacts of drones to WPAFB.

The advancement and accessibility of drones, or UAS technology, present a potential safety and security concern for WPAFB.

Drones are easily accessible throughout the nation. Today, they can be used for recreation and are commonly used to video-record aerial imagery of sports, nature, facilities, roadways, and commercial and recreational activities. Small drones can also be used to drop munitions and surveil conflict areas worldwide.

Drones disrupt operations at WPAFB, which is a concern. WPAFB provides various research and technological advancements in medical, aviation, and other services. It also hosts the Air Force Materiel Command, home to the Air Force Institute of Technology. It is the command center for numerous agencies such as the Life Cycle Management Center, Research Laboratory, Air and Space Intelligence Center, and many others.

The implications of UASs can be significant and raise security concerns. Among them are the following:

- Security Risks
 - Surveillance Threats: Drones equipped with cameras can be used for unauthorized surveillance, gathering sensitive information about the facility's layout, infrastructure, and activities.
 - Potential for Espionage: Adversaries may deploy drones to conduct espionage, collecting data that could be used for nefarious purposes such as cyberattacks or physical breaches.
- Breach of Physical Security
 - Delivery of Harmful Payloads: Drones can transport and deliver harmful payloads, including explosives or chemical substances, posing a direct physical threat to the facility and its personnel.

- Intrusion and Reconnaissance: Drones might be employed to conduct reconnaissance missions to identify vulnerabilities, potential entry points, and security measures in place.
- Communication Interception
 - Signal Interception: Drones equipped with the right technology can intercept communication signals, potentially compromising classified information or sensitive communications within the facility.
- Counter-Surveillance Challenges
 - Detection Difficulties: Detecting small, low-flying drones can be challenging, particularly if designed to operate quietly or at a distance. This makes it harder for security personnel to identify and neutralize potential threats.
- Regulatory Compliance
 - Regulatory Challenges: Adherence to regulations regarding the operation of drones near sensitive facilities is crucial. However, enforcing these regulations can be challenging, especially if the operator intentionally tries to avoid detection.
- Response and Mitigation
 - Anti-Drone Systems: Implementing counter-drone technologies and systems can help detect and mitigate potential threats. This includes using signal jammers, radio frequency detectors, and, in extreme cases, methods to disable and/or take control of the drone physically.
- Policy and Legislation
 - Legal Frameworks: Establishing and enforcing clear policies and legislation regarding the operation of drones near sensitive facilities is essential. This helps deter unauthorized drone activity and provides a legal basis for responding to such incidents.
- Technological Advancements
 - Emerging Threats: As drone technology advances, the potential threats posed by drones may evolve. Facilities must stay up to date on technological developments and continuously adapt their security measures.

Overall, the implications of UASs around military facilities underscore the importance of comprehensive security measures, including technological solutions and robust policy frameworks. It is a complex and dynamic challenge that requires ongoing attention to emerging threats and the development of effective countermeasures.

While the area around WPAFB is known as a no-drone fly zone, establishing protocols to ensure that drone sightings around the base are reported quickly and judiciously is highly advised. Working groups and adopting national best practices may reduce drone-related incursions and damages.

Land Use

Local jurisdictions' comprehensive plans and zoning ordinances can be the most effective tools for preventing or resolving land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character or may adversely impact one another, regardless of use similarity. For instance, industrial uses are often separated from residential uses to avoid the industrial impacts of noise, odors, and lighting on residents.

Land use planning and regulation are the government's responsibility, designed to protect the public's health, safety, and welfare. Land use planning near and around military installations is similarly used to evaluate land use compatibility, as local jurisdictions consider compatibility factors such as noise when locating residential developments near commercial or industrial areas.

As the land between local municipalities is developed or the land between a local municipality and the perimeter of a military installation is developed, both entities are affected. New residents, tenants, or building owners may not fully know the implications of locating near an active military installation or training area.

The Air Force consolidated its planning functions into one Air Force Instruction 32-1015 in 2019, which includes the Air Force AICUZ Program. The land use compatibility tables for military Installations can be found in DODI 4165.57 Air Installations Compatible Use Zones. The AICUZ Instruction includes general land use guidelines for safety and noise associated with aircraft operations. The 2022 WPAFB AICUZ Study incorporated the general land use compatibility guidelines per the DODI.

The land use compatibility assessment in this CUP is based on the land use guidelines found in DODI 4165.57 AICUZ. These guidelines are provided in Table 6-1 for safety and Table 6-2 for noise and referred to in the following land use, noise, and safety factor sections as the basis for compatibility assessment where applicable.

Land uses in the table are based on the U.S. Department of Transportation publication Standard Land Use Coding Manual (SLUCM) for identifying and coding land use activities. Some land use guidelines require the user to reference additional information in the Legend and Notes section at the end of the table. While the land uses are based on the DODI, land uses that may conflict with other compatibility requirements have been identified as follows:

- BASH potential land use conflicts are identified with the  icon
- Dust/smoke/steam potential land use conflicts are identified with the  icon
- Glint/glare potential land use conflicts are identified with the  icon
- Frequencies of potential land use conflicts are identified with the  icon
- Vertical obstructions and potential land use conflicts are identified with the  icon

It is important to note that DoD land use guidance comprises recommendations to facilitate compatible development. Many properties in the communities surrounding WPAFB are either developed or subject to zoning, which governs use, residential density, and nonresidential intensity of development. Given these conditions, amending zoning to

support DoD land use recommendations is a sensitive issue affecting personal property rights and values. It can result in the taking of land where the beneficial use of a property is affected, reducing its value. A property owner seeks compensation for the loss in development potential. For this reason, any changes to the zoning or use of property must be conducted with full transparency and input from affected property owners.

The land use compatibility guidelines used to assess compatibility around military installations are below in Table 6-1 (Safety Zones) and Table 6-2 (Aircraft Noise).

Table 6-1 Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones

Land Use Name & SLUCM Category	Safety Zones			
	Clear Zone	APZ I	APZ II	Density Restrictions
Residential Use Group (SLUCM Category 10)				
Residential uses, inclusive of all residential units, i.e., any type of single or multiple dwelling unit	N	N	Y ^{1,2}	Maximum density of 2 dwelling units per acre
Mobile home parks or courts	N	N	N	
Transient lodgings	N	N	N	
Manufacturing Use Group (SLUCM Categories 20 & 30)				
Food and kindred products; textile mill products; manufacturing; stone, clay, glass, primary metal and fabricated metal products; manufacturing	N	N	Y	Maximum FAR of 0.56 in APZ II
Fabric products; leather and similar materials; chemicals and allied products; petroleum refining and related industries; rubber and miscellaneous plastic products; manufacturing; precision manufacturing	N	N	N	
 Lumber and wood products; manufacturing furniture and fixtures; paper and allied products; printing, publishing and allied industries; miscellaneous manufacturing	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
				

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Table 6-1 Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

Land Use Name & SLUCM Category	Safety Zones			Density Restrictions
	Clear Zone	APZ I	APZ II	
Transportation, Communication, and Utilities Use Group (SLUCM Category 40)				
Rail, motor vehicle, aircraft, marine, etc. transportation, highway and street right-of-way, automobile parking and utilities, telephone, cellular and radio communication 	N ³	Y ⁴	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
Solid waste disposal (landfills, incinerators, etc.) 	N	N	N	
Trade (SLUCM Category 50)				
Wholesale trade	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
Retail trade — building materials	N	Y	Y	Maximum FAR of 0.20 in APZ I & 0.40 in APZ II
Retail trade — hardware, paint and farm equipment stores	N	Y	Y	Maximum FAR of 0.12 in APZ I & 0.24 in APZ II
Retail trade — including neighborhood centric shops	N	N	Y	Maximum FAR of 0.16 in APZ II
Mass retailing, super stores, strip malls, shopping centers, ⁵ discount clubs, home improvement stores, etc.; eating and drinking establishments ¹²	N	N	N	
Retail trade — prepared and unprepared food such as groceries, bakeries, confectionaries, meat markets and fast-food restaurants with drive-through service ¹²	N	N	Y	Maximum FAR of 0.24 in APZ II

Table 6-1 Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

Land Use Name & SLUCM Category	Safety Zones			Density Restrictions
	Clear Zone	APZ I	APZ II	
Trade (SLUCM Category 50) [continued]				
Retail trade — automotive, marine craft, aircraft, and accessories	N	N	Y	Maximum FAR of 0.14 in APZ I & 0.28 in APZ II
Retail trade — apparel and accessories, furniture, home furnishings, and equipment	N	N	Y	Maximum FAR of 0.28 in APZ II
Other retail trade	N	N	Y	Maximum FAR of 0.16 in APZ II
Services (SLUCM Category 60)				
Finance, insurance, real estate, personal, professional, and miscellaneous services (office use only)	N	N	Y	Maximum FAR of 0.22 in APZ II
Cemeteries	N	Y ⁶	Y ⁶	
Warehousing and storage services	N	Y	Y	Maximum FAR of 1.0 in APZ I & 0.22 in APZ II
Repair services and contract construction	N	Y	Y	Maximum FAR of 0.11 in APZ I & 0.22 in APZ II
Hospitals, nursing homes and other medical facilities; educational services, childcare services, child development centers, and nurseries	N	N	N	
Governmental services	N	Y	Y	Maximum FAR of 0.24 in APZ II

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Table 6-1 Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

Land Use Name & SLUCM Category	Safety Zones			
	Clear Zone	APZ I	APZ II	Density Restrictions
Cultural, Entertainment and Recreational (SLUCM Category 70)				
Nature exhibits	N	Y ⁷	Y ⁷	
Cultural activities, auditoriums, concert halls, places of worship; outdoor music shells, museums, outdoor displays, amphitheaters, sports arenas, spectator sports, resorts, and group camps or other places of assembly	N	N	N	
Amusements — fairgrounds, miniature golf, driving ranges; amusement parks, etc.	N	N	Y ¹¹	50 people per acre
Recreational activities (including golf courses, riding stables, water recreation), parks	N	Y ⁷	Y ⁷	Maximum FAR of 0.11 in APZ I & 0.22 in APZ II
 Other cultural, entertainment, and recreation	N	Y ⁶	Y ⁶	
Resource Production and Extraction (SLUCM Category 80)				
Agriculture and livestock farming, including grazing and feedlots	Y ⁸	Y ⁸	Y ⁸	
 Agriculture-related activities	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
 Forestry activities ⁹	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
 Fishing activities	N ¹⁰	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
 Mining activities	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II

Table 6-1 Department of Defense Land Use Compatibility Guidelines for Aircraft Safety Zones (continued)

Land Use Name & SLUCM Category	Safety Zones			
	Clear Zone	APZ I	APZ II	Density Restrictions
Resource Production and Extraction (SLUCM Category 80) [continued]				
Other resource production or extraction	N	Y	Y	Maximum FAR of 0.28 in APZ I & 0.56 in APZ II
Other (SLUCM Category 90)				
Undeveloped land	Y	Y	Y	
Water areas 	N	N	N	

Key to Safety Compatibility Table

Y (Yes) – Land use and related structures are compatible without restrictions.

N (No) – Land use and related structures are not compatible and should be prohibited.

Y^x – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.

N^x – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.

General notes for all uses:

a. The suggested maximum occupancy for commercial, service, or industrial buildings or structures in APZ I is 25 people per acre and 50 people per acre in APZ II. Outside events should normally be limited to assemblies of not more than 25 people an acre in APZ I and maximum assemblies of 50 people an acre in APZ II.

b. Recommended FARs are calculated using standard parking generation rates from Institute of Transportation Engineers trip and parking generation guidance for various land uses, vehicle occupancy rates, and desired density in APZ I and II. For APZ I, the formula is FAR = 25 people per acre / (average vehicle occupancy x average parking rate x (43560/1000)). The formula for APZ II is FAR = 50 / (average vehicle occupancy x average parking rate x (43560/1000)).

c. No structures (except airfield lighting and navigational aids necessary for the safe operation of the airfield when there are no other siting options), buildings, or aboveground utility and communications lines should normally be located in Clear Zone areas on or off the air installation. For pilot and public safety, the Clear Zone is subject to the most severe restrictions.

d. Safety of flight should be considered when evaluating development that includes explosive potential; generates smoke, steam, ash or dust, and steam; creates electronic interference, lighting, or glare; or tall structures.

e. Development of renewable energy resources, including solar and geothermal facilities and wind turbines, may impact military operations through hazards to flight or electromagnetic interference. Each new development should be analyzed for compatibility on a case-by-case basis that considers both the proposal and the potentially affected mission.

f. Water features and other activities that may present bird/wildlife aircraft strike hazards or activities that produce dust or light emissions that could affect pilot vision are generally not compatible and should be evaluated on a case-by-case basis.

g. Evaluation of potential land management actions occurring on public and private lands, such as prescribed burns, should identify the hazard (i.e., visual impairment) to aircraft flight safety to de-conflict operations occurring at the base (i.e., scheduled exercises and training requirements).

h. This compatibility table identifies places of worship and tribal ceremonies as cultural gatherings. However, religious institutions provide a wide variety of services and in these instances refer to the applicable category.

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Footnotes specific to certain land uses:

- 1. The suggested maximum density for detached single-family housing is two dwelling units per acre to encourage retention of farming and open space.*
- 2. Where a parcel is partially located in an APZ II, clustered development is encouraged on the portion outside the APZ while maximizing open space within the APZ.*
- 3. All roads within the Clear Zone are discouraged, but if required, they should not be wider than two lanes and the rights-of-way should be fenced (frangible) and not include sidewalks or bicycle trails. Nothing associated with these roads should violate obstacle clearance criteria.*
- 4. Aboveground passenger terminals and aboveground power transmission or distribution lines are not recommended. Prohibited power lines include high-voltage transmission lines and distribution lines that provide power to cities or towns or regional power for unincorporated areas.*
- 5. A shopping center is an integrated group of commercial establishments that is planned, developed, owned, or managed as a unit. Shopping center types include strip, neighborhood, community, regional, and super-regional facilities anchored by small businesses, a supermarket or drug store, discount retailer, department store, or several department stores, respectively. The maximum recommended FAR should be applied to the gross leasable area of the shopping center.*
- 6. Land uses in the APZs should be passive open space; ancillary places of public assembly are not recommended.*
- 7. Low-occupancy facilities are compatible with these uses; however, playgrounds and marinas are not recommended.*
- 8. Activities that attract concentrations of birds creating a hazard to aircraft operations are not compatible.*
- 9. Lumber and timber products removed due to establishment, expansion, or maintenance of Clear Zone lands owned in fee will be disposed of per applicable DoD guidance.*
- 10. Controlled hunting and fishing may occur for the purpose of wildlife management.*
- 11. Amusement centers, family entertainment centers, or amusement parks designed or operated at a scale that could attract or result in concentrations of people, including employees and visitors, greater than 50 people per acre at any given time are incompatible in APZ II. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.*
- 12. "Eating and drinking establishments" are distinguished from retail trade or fast-food based on the predominant purpose of the restaurant to provide food and beverages to persons seated on premises. This includes cafes, tea rooms, and outdoor cafes that involve low customer turnover and greater numbers of people dining on-site. Restaurants with drive-through service that offer quick, fast-food service, often accomplished by a limited menu of already prepared items and that have typically high customer turnover and lower numbers of customers dining on-site, fall within the retail trade or fast-food category.*

Table 6-2 Department of Defense Land Use Compatibility Guidelines for Aircraft Noise Zones

Land Use Name and SLUCM Category	A-Weighted DNL/CNEL Levels					
	< 65 dB	65 - 70 dB	70 - 75 dB	75 - 80 dB	80 - 85 dB	85+ dB
Residential Use Group (SLUCM Category 10)						
Residential uses, inclusive of all residential units, i.e., any type of single or multiple dwelling unit	Y	N ¹	N ¹	N	N	N
Mobile home parks or courts	Y	N	N	N	N	N
Transient lodgings	Y	N ¹	N ¹	N ¹	N	N
Manufacturing Use Group (SLUCM Categories 20 & 30)						
Manufacturing and industrial uses	Y	Y	Y ²	Y ³	Y ⁴	N
Precision manufacturing	Y	Y	Y ²	Y ³	N	N
Transportation, Communication, and Utilities Use Group (SLUCM Category 40)						
Rail, motor vehicle, aircraft, marine, and other transportation and communication systems and utilities	Y	Y	Y ²	Y ³	Y ⁴	N
Highway and street right-of-way, automobile parking	Y	Y	Y	Y	Y	N
Telephone, cellular, and radio communication	Y	Y	Y ²	Y ³	N	N
Trade (SLUCM Category 50)						
Wholesale trade	Y	Y	Y ²	Y ³	Y ⁴	N
Building materials, hardware, and farm equipment sales	Y	Y	Y ²	Y ³	Y ⁴	N
Mass retailing, super stores, strip malls, shopping centers, discount clubs, home improvement stores, etc.; eating and drinking establishments	Y	Y	Y ²	Y ³	N	N

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Table 6-2 Department of Defense Land Use Compatibility Guidelines for Aircraft Noise Zones (continued)

Land Use Name and SLUCM Category	A-Weighted DNL/CNEL Levels					
	< 65 dB	65 - 70 dB	70 - 75 dB	75 - 80 dB	80 - 85 dB	85+ dB
Services (SLUCM Category 60)						
Finance, insurance and real estate, personal, professional, and miscellaneous services, religious activities	Y	Y	Y ²	Y ³	N	N
Cemeteries	Y	Y	Y ²	Y ³	Y ⁴	Y ⁵
Warehousing/storage & repair services	Y	Y	Y ²	Y ³	Y ⁴	N
Hospitals/medical, childcare & development services, educational facilities	Y	Y ²	Y ³	N	N	N
Nursing homes	Y	N ¹	N ¹	N	N	N
Governmental	Y	Y	Y ²	Y ³	N	N
Cultural, Entertainment, and Recreational (SLUCM Category 70)						
Cultural activities, auditoriums & concert halls	Y	Y ²	Y ³	N	N	N
Nature exhibits	Y	Y	N	N	N	N
Public assembly	Y	Y	N	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Outdoor sports arenas, spectator sports	Y	Y ⁶	Y ⁶	N	N	N
Amusements	Y	Y	Y	N	N	N
Outdoor recreational activities	Y	Y	Y ²	Y ³	N	N
Resorts, camps, parks & other camping, entertainment, or recreational activities	Y	Y	Y ²	N	N	N

Table 6-2 Department of Defense Land Use Compatibility Guidelines for Aircraft Noise Zones (continued)

Land Use Name and SLUCM Category	A-Weighted DNL/CNEL Levels					
	< 65 dB	65 - 70 dB	70 - 75 dB	75 - 80 dB	80 - 85 dB	85+ dB
Resource Production and Extraction (SLUCM Category 80)						
Agriculture and Forestry	Y	Y ⁷	Y ⁸	Y ⁹	Y ⁹	Y ⁹
Livestock farming, animal breeding	Y	Y ⁷	Y ⁸	N	N	N
Fishing, mining, and other resource production and extraction	Y	Y	Y	Y	Y	Y

Key to Noise Compatibility Table

Y (Yes) – Land use and related structures are compatible without restrictions.

N (No) – Land use and related structures are not compatible and should be prohibited.

Y^x – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.

N^x – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.

General notes for all uses:

- a. Compatibility designations in Table 1 generally refer to the principal use of the site. If other uses with greater sensitivity to noise are proposed, a determination of compatibility should be based on that use which is most adversely affected by noise and its contribution to the successful use of the property.
- b. Where a proposed development falls within two DNL and CNEL noise zones, the land use recommendations of the higher noise should be used. For example, if a proposed development is exposed to 70 dB DNL and CNEL, land use recommendations for the 70-75 DNL and CNEL noise zones should be applied.
- c. When appropriate, noise level reduction (NLR) may be necessary to achieve compatibility. NLR (outdoor to indoor) is achieved through the incorporation of sound attenuation into the design and construction of a structure. Measures to achieve an

- indoor noise reduction do not necessarily solve noise issues outside the structure and additional evaluation may be warranted. Building location, site planning, design and use of berms and barriers can help mitigate outdoor noise exposure, particularly from aircraft ground maintenance run-ups. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.
- d. Land uses below 65db DNL are generally compatible. However, localities, when evaluating the application of these guidelines, should consider possible annoyance tied to land uses that involve predominately outdoor activities or where quiet is a basis for the use.
- e. Land use that involves outdoor activities in areas above 80db DNL are not recommended.

Footnotes specific to certain land uses:

- 1. Residential.
 - a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged above DNL 70. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals. These evaluations should clearly demonstrate that the community's need for additional residential property could not be met if development was prohibited in these zones and that the expense of additional noise attenuation will not undermine affordable housing goals.
 - b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB in DNL 65-70 and 30 dB in DNL 70-75 should be incorporated into building codes and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-80.
 - c. Normal permanent construction can be expected to provide an NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year-round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.

2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

5. Buildings where the public is received are not recommended.

6. Land use is compatible provided special sound reduction systems are installed.

7. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 25 dB should be incorporated into the design.

8. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 30 dB should be incorporated into the design.

9. Residences are not compatible.



LU-1

Assess inconsistent noise regulations in local zoning codes.

Regulations for noise-sensitive land uses within noise contours are in the Airport Zoning Regulations but not mirrored in local government zoning regulations. This can create inconsistencies in information and guidance conveyed to the public and development community by local government planning staff.

When developments are submitted, or developers review existing codes and regulations, there is often an assessment of the existing jurisdiction that controls land use development. County codes are often overlooked because developers may assume that the local code supersedes any county requirement.

The Airport Zoning Regulations include Chapter 4: Sound Level Reduction (SLR) Design Requirements. This chapter details permissible building standards for ceilings, doors, floors, ventilation, walls, and windows to ensure that structures are built to reduce the interior sound level in the zone where they are developed. The appointed Airport Zoning Inspector should conduct a compliance inspection before the building becomes certified for occupancy.

It has been over 25 years since the 1997 WPAFB Airport Zoning Regulations were enacted. Four participating counties adopted the regulations: Clark, Greene, Miami, and Montgomery. These regulations were adopted after the 1997 Joint Land Use Study. The WPAFB Airport Zoning Board was established to implement the regulations. Montgomery County was initially established as the Airport Zoning Inspector to ensure compliance. Over time, the approval and review inspection authority was delegated to the local jurisdiction. Dayton does not have local jurisdiction and sends development applications to Montgomery County for review and compliance inspections.

Over 25 years have passed since adopting and enforcing the noise guidelines found within the WPAFB Airport Zoning Regulations. During that time, the adoption of these regulations was not formalized in local codes; however, inspection authority was delegated to each local jurisdiction. It is possible that during the review process of a development proposal, a staff-level planner would be unaware of the existing county regulations as they are not

codified inside the local jurisdiction's codebook. Due to this, it is also possible that some structures built after 1997 are out of compliance.

Additionally, the lack of noise regulations within local zoning codes excludes the DoD's recommendation that all residential development exists outside of the 65 dB DNL or greater noise contours (this is due to the inability to mitigate noise levels outside the structure). The DoD guidance as written in footnote 1a of Table 6-2, states:

“Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged above DNL 70. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals. These evaluations should clearly demonstrate that the community's need for additional residential property could not be met if development were prohibited in these zones and that the expense of additional noise attenuation will not undermine affordable housing goals.”

To further enhance the effectiveness of these regulations, the WPRCOG should take the lead in updating the 1997 Airport Zoning Regulations. The WPRCOG encompasses the cities within the regulated areas. These cities can adopt the existing 1997 regulations into their land use planning codes. Furthermore, the WPAFB COG should consider creating a comprehensive future land use plan. This plan could include assessing existing land use across all parcels covered by the Airport Zoning Regulations. The land use plan can then be shared with each jurisdiction's regulatory authority board for adoption. This collaborative effort will guide the reviews conducted by the Development Board and Planning and Zoning Commission, ensuring that development aligns with both the military mission and the jurisdiction's needs, leading to mutually beneficial outcomes.



LU-2

There is a lack of airfield safety zone regulations in local zoning codes.

Local zoning regulations do not regulate compatible land uses within the CZ, APZ I, and APZ II.

The Airport Zoning Regulations, when established, do not address land use inside the safety zones. The primary reason is that most of the developable land is within a floodway and has few uses. The land in the southern safety zone outside WPAFB is partially located in Huffman MetroPark and within the floodways of the Mad River.

Inside Clark County to the north of WPAFB, a significantly larger portion of the safety zones exists outside WPAFB. WPAFB has one Class A and one Class B runway. The combined safety zones for these runways extend to the intersection of I-70 and I-675. These areas include portions of the Sandhill Dog Park, undeveloped land, and various industrial companies.

There are no land use regulations in place to limit, mitigate, or prevent continued land use development in portions of Greene County and Clark County within the safety zones. Also, there is no formalized coordination process in which development proposals are reviewed by WPAFB, in an advisory role, to assess the risk to flight safety and compatibility concerns on proposed development before financial investments are placed on the proposed land use.

For example, the paving materials and concrete facilities near the airfield may create dust/steam/smoke that impedes pilot vision during takeoff and landing. Additionally, the resting pools of water on site are bird attractants that can damage the propeller-driven aircraft based at WPAFB. The business owners do not have a memorandum of agreement with WPAFB to mitigate potential flight hazards due to regular operations.



LU-3

The 1997 WPAFB Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones.

The 1997 Airport Zoning Regulations are over 25 years old. They should be updated using digital technology to ensure they correspond with current DoD land use guidance for development within airfield safety zones and imaginary surfaces. The maximum buildable heights within the Airport Zoning Regulations do not reflect the complete boundary of current imaginary surfaces or the dynamic nature of how maximum buildable heights are calculated.

As mentioned in LU-2, no existing guidance for land use inside the safety zones within the 1997 regulations. It is possible that the exemption occurred due to floodways in much of the land covered by the safety zones. However, this exception leads to the potential for land use development incompatible with flight operations. No coordination procedure exists to review development plans before approval is given inside or near the safety zones.

In 2022, the DoD took a significant step by updating the AICUZ Instruction. This encouraged residential land use outside areas with aircraft noise levels exceeding 65 dBA or higher. Before this update, the guidance emphasized implementing sound-reduction strategies to lower indoor sound levels. However, following comprehensive assessments, the guidance was revised to better account for the impact of aircraft noise that cannot be effectively mitigated within structures. Consequently, the presence of aircraft operations may affect the outdoor enjoyment of the community due to elevated noise levels.

Notable changes between the 1975 regulations and the revised 1997 regulations include:

- The use of Mission Capacity Contours for assessing noise impacts, rather than specific year noise exposure contours, was originally introduced in the 1997 regulations, marking a change from the 1975 regulations. This approach was supported by the jurisdictions surrounding WPAFB, WPAFB itself, and the DoD Office of Economic Adjustment. However, the practice has since been updated, and Mission Capacity Contours are no longer used in USAF requirements.
- Consolidation of 11 districts into six districts
 - District 1 – Runway Protection Zones
 - District 2 – 75-79 dB DNL Noise Zone
 - District 3 – 70-74 dB DNL Noise Zone
 - District 4 – 65-69 dB DNL Noise Zone
 - District 5 – Built-up Areas
 - District 6 – Federally Owned Public Lands
- Appendix A of the 1997 JLUS provides the correlation between the 1975 and 1997 districts and describes changes to the sound level reduction construction design requirements. The requirements for noise reduction effectiveness have been examined and updated in view of the changes in building materials available since 1975.

This change will result in a simpler system of Zoning Districts for both evaluation and administration.

The AICUZ land use compatibility guidance encourages residential land use outside the noise zones. However, if sound reduction measures were taken, residential land use could be deemed “incompatible with exemptions.” This assessment has often been misunderstood to imply that if sound level reduction strategies were implemented during construction, noise would not be an issue for residents living within the sound footprint. This does not account for the sound outside the residence, which cannot be mitigated.

Today, noise is a major encroachment issue around military bases. To correct this misunderstanding, the DoD reissued the AICUZ guidance with a continued emphasis on improving land use planning by encouraging local planning agencies to require an assessment that no reasonable alternative location is available for residential property(ies).

Meanwhile, the Airport Zoning Regulations have historically promoted compatible land use around the base. There is a possibility that the regulations have been overlooked during development reviews. This is partly due to the administrative structure, where Montgomery County is the de facto airport zoning inspector, a position held by the Chief Building Inspector for Montgomery County. The Inspector participates on the WPAFB Airport Zoning Board, and local jurisdictions have the authority to manage the restrictions — except for Dayton, which sends plans to Montgomery County for review.

The 1997 Airport Zoning Regulations provide clear guidance on land use zones, including a runway protection zone, and emphasize the importance of noise level reduction strategies when planning within airport zoning districts two through four. The choice of noise reduction strategies depends on the noise zone in which the proposed land use is located.

The community should enhance its land use compatibility with aircraft operations. Below are three recommended strategies:

1. Review and Update Airport Zoning Regulations.

- Conducting a thorough review of Airport Zoning Regulations to incorporate revisions based on updated land use compatibility guidelines is crucial. This ensures that regulations are in line with current requirements.
- Assessing existing zones is equally important, as it allows for necessary adjustments to maintain alignment with evolving standards.

This step is vital to keep land use regulations up to date and compatible with the area’s changing dynamics of aircraft operations. It helps prevent potential conflicts and adequately addresses safety and noise considerations.

2. Consider Adopting 2022 AICUZ Aircraft Noise Contours.

- Given the subtle shifts in aircraft noise contours over time, it is advisable for the Airport Zoning Board to contemplate adopting the 2022 AICUZ aircraft noise contours into planning codes and land use regulations.

This measure is valuable for accurately reflecting the noise impact of aircraft operations, which can significantly affect the community. Ensuring that zoning regulations align with the latest data enhances transparency and safety.

3. Amend Zones Outside WPAFB.

- Focusing on amending regulations for the five zones outside the base is crucial. This proactive approach helps prevent incompatible development and guarantees the long-term compatibility of land use with aircraft operations.

Amending these zones is essential to avoid potential land use conflicts and ensure that the community's growth and development aligns with the safety and operational needs of WPAFB.

Incorporating these recommendations into the community's planning and development processes will enable proactive management of land use compatibility issues, fostering a safer and more harmonious coexistence with aircraft operations. Ultimately, taking these actions contributes to an improved quality of life for residents while supporting the mission of WPAFB.



LU-4

Review and address the application of height regulations surrounding WPAFB.

Height regulations in local zoning codes reference the FAA requirements or the Airport Zoning Regulations but lack transparency and clarity on how these requirements are administered.

The absence of height regulations around an active military airfield raises significant concerns and potential safety issues. Without established regulations or guidance to find and understand them, controlling the height of structures within the HAFZ is difficult.

The following complications may arise due to a lack of formalized processes or understanding of the height regulations impacting parcels under development review:

- Airspace Vulnerability/Unrestricted Airspace Access
 - The lack of height regulations may lead to unauthorized intrusion into restricted airspace, posing a direct threat to the safety of aircraft operating in the vicinity.
- Challenges in Emergency Response/Limited Emergency Landing Options
 - Tall structures, in the absence of regulations, reduce available emergency landing options for aircraft facing engine failure or other emergencies, increasing the potential for accidents.

- Compromised Instrument Approaches/Precision Landing Challenges
 - In the absence of regulations, tall structures could disrupt the precision approach paths critical for instrument landings, making it difficult for pilots to execute safe and accurate landings.
- Heightened Bird/Wildlife Aircraft Strike Hazard/Attracting Birds
 - Tall structures may attract birds, heightening the risk of bird strikes during takeoff and landing. This poses a serious hazard, as bird collisions can lead to engine damage and other critical issues.
- Increased Obstacle Risk/Impaired Flight Safety
 - Without height regulations, tall structures can become prominent obstacles for departing and arriving aircraft, elevating the risk of collisions.
- Navigational Disruptions/Interference with Systems
 - Tall structures may interfere with the proper functioning of navigational aids and communication systems, potentially jeopardizing the ability of pilots to receive accurate information and communicate effectively.
- Regulatory Ambiguity/Compliance Challenges
 - The absence of clear regulations may result in ambiguity regarding safety standards, leading to challenges in ensuring that structures adhere to necessary safety measures and do not compromise aviation safety.
- Urban Development Conflicts/Zoning and Planning Issues
 - The lack of height regulations may result in conflicts with established zoning regulations and urban development plans designed to maintain the safety and functionality of airfield infrastructure.
- Visibility and Marking Concerns/Inadequate Visibility
 - Without height regulations, structures may obstruct airfield lighting systems and other navigational aids, compromising their visibility to pilots and increasing the risk of operational difficulties.

Ultimately, the absence of height regulations around an active military airfield poses a serious threat to aviation safety, necessitating the establishment of clear and comprehensive regulations to address these concerns and ensure the safe operation of aircraft in the vicinity.



LU-5

Review and address utility pole lines and tree airfield compliance issues.

Airfield compliance issues centered around utility pole lines along SR-235 and trees on private property obstructing WPAFB imaginary surfaces.

The overhead utility lines at the north end of the Wright-Patterson Air Force Base runway present a significant operational hazard to flight operations. They pose a threat to aircraft taking off and landing. These lines are located near the flight path, creating a risk of collision or interference with aircraft during critical phases of flight. The height and configuration of the utility lines increase the likelihood of accidents, especially during adverse weather conditions or low visibility.

Potential risks associated with utility lines near WPAFB include:

- **Collision Risk:** Aircraft taking off or landing may inadvertently encounter the power lines, leading to consequences such as loss of control, structural damage, or even fatalities.
- **Electromagnetic Interference:** The electromagnetic fields generated by the power lines can interfere with aircraft systems, including navigation and communication equipment, posing a risk to flight safety.
- **Visual Distraction:** Pilots may be visually distracted by the presence of the power lines, especially during critical maneuvers, increasing the risk of spatial disorientation or misjudgment.

Trees on private property near the WPAFB imaginary surfaces, such as approach and departure paths, create a hazard by encroaching into airspace reserved for safe flight operations. These obstructions can impede aircraft takeoffs and landings, affect navigational aids, and increase the risk of accidents during flight.

- **Obstacle Collision Risk:** Aircraft departing or approaching WPAFB may encounter trees on private property, leading to potential collisions, structural damage, or loss of control.
- **Nuisance to Navigation:** Trees obstructing imaginary surfaces can interfere with navigational aids, including instrument approach procedures and visual flight rules, compromising flight safety and accuracy.
- **Visual Distraction:** Pilots may be visually distracted by obstructions near critical flight paths, which can impact their situational awareness and decision-making capabilities.

Noise

Sound that reaches unwanted levels is referred to as noise. The central issue with noise is its impact, or perceived impact, on people and animals (wild and domestic). Exposure to prolonged high sound levels can significantly impact activities, health, safety, and quality of life.



NOI-1

There is incompatible development within the noise contours.

Noise-sensitive land uses, such as residential, educational, and childcare facilities, places of worship and public assembly, medical facilities, and long-term care facilities that are subject to low-level aircraft overflight, can experience noise levels that impact quality of life.

The DoD recognizes the significant challenges posed by noise generated during military operations and the prolonged exposure to such noise in neighboring communities. Unlike visual or environmental factors, noise often extends beyond the boundaries of military installations and is more noticeable to the public. As a result, noise-related issues generate numerous complaints from the community and heavily influence decisions regarding land use planning near military installations. Noise concerns dominate funding requests through the DoD's REPI Program, which aims to safeguard land around installations and training ranges from incompatible development.

Additionally, the OLDCC has initiated the Community Noise Mitigation Program, which is like the FAA's Airport Improvement Program. The Community Noise Mitigation Program has targeted funding for communities affected by military aircraft noise, focusing on qualifying facilities within the fixed-wing aircraft noise contours of 65 dB on the DNL scale and higher.

Developing in high aircraft noise zones presents several challenges and concerns, primarily related to the potential negative impacts on residents, the environment, and overall quality of life. Key issues associated with development in areas characterized by high aircraft noise include the following:

1. Noise Pollution and Health Effects

Prolonged exposure to high levels of aircraft noise has been associated with various health issues, including stress, sleep disturbance, and an increased risk of cardiovascular problems. Residents in these areas may experience reduced overall well-being.

2. Quality of Life

High levels of aircraft noise can disrupt daily activities for residents, affecting their ability to concentrate, relax, and communicate effectively. This can lead to a diminished quality of life for those living inside a high-noise zone.

3. Property Values

Properties located in high aircraft noise zones may experience reduced market values due to the perceived negative impact on livability. Potential homebuyers may be less inclined to invest in areas with significant noise pollution.

4. Land Use Planning Challenges

Development in high aircraft noise zones may face zoning restrictions and land use planning challenges. Authorities may impose limitations on the structures and activities permitted in these areas.

5. Regulatory Compliance

Developers must adhere to noise regulations and standards, which may involve implementing noise mitigation measures such as soundproofing buildings. Failure to comply with these regulations can result in legal issues and delays in project approval.

6. Community Opposition

Residents and local communities may resist new developments in high aircraft noise zones due to concerns about the negative impact on their daily lives. Conversely, residents could see restrictions on residential development within the aircraft noise contours as unnecessary and seek permits to build within the noise zones. This can lead to community opposition and protests.

7. Schools and Institutions

High aircraft noise can affect educational institutions in the area, disrupting learning environments and potentially impacting students' academic performance.

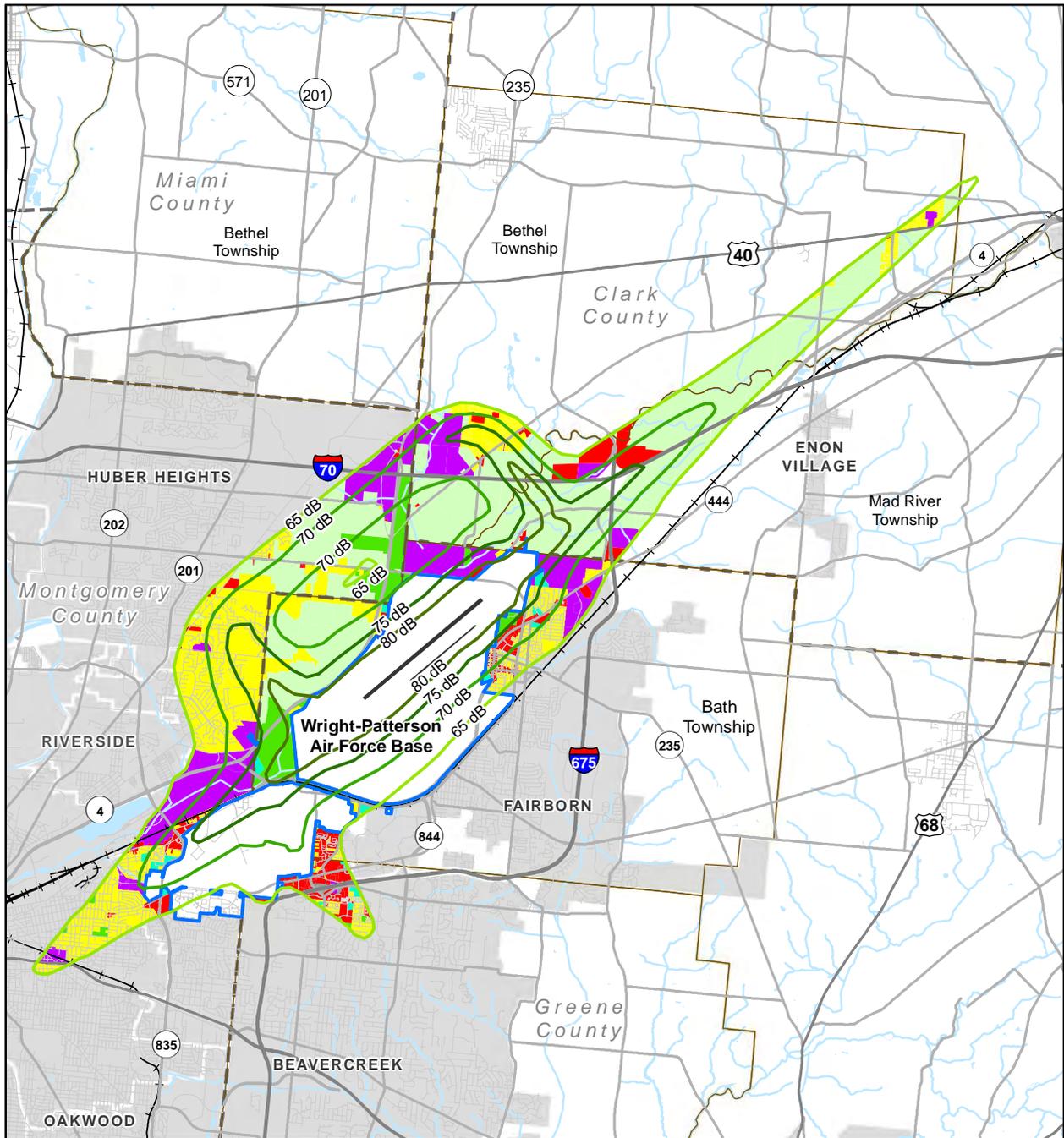
8. Sound Attenuation Expenses/Noise Mitigation Costs

Developers may incur additional costs to implement noise mitigation measures, such as installing sound barriers, double-glazed windows, and other technologies designed to reduce the impact of aircraft noise on residents.

Developing high aircraft noise zones requires careful consideration of the potential impacts on residents, the local environment, and the overall livability of the area. Effective planning, community engagement, and adherence to noise regulations are essential to mitigate these issues and create sustainable, harmonious communities in such zones. Generalized land use within the noise contours at WPAFB is shown on Figure 6-1, and incompatible land use within the noise contours is found in Figure 6-2. Additional details can be found within the 2022 WPAFB AICUZ.

WPAFB typically receives very few noise complaints related to aircraft operations. This is largely due to the base's long-standing presence in the community and the efforts of the WPAFB Airport Zoning Board, which ensures that developments incorporate sound level reduction measures inside structures to mitigate the noise generated by aircraft flying overhead. The WPAFB Public Affairs department can establish clear communication protocols. These protocols will inform the community when deviations from the standard aircraft operations schedule exist. For instance, they can be particularly useful when military aircraft are temporarily stationed at WPAFB during adverse weather events.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN



Generalized Existing Land Use

- Agricultural
- Residential
- Commercial
- Industrial

- Public/Quasi-Public
- Recreation/Open Space
- Transportation/Communication/Utilities

2022 Noise Contours

- 65 dB
- 70 dB
- 75 dB
- 80 dB

- Runway
- Wright-Patterson AFB
- City
- Township
- County Boundary

- Interstate/US Highway
- State Route
- Major Road
- Local Road
- Railroad



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.



Figure 6-2 Existing Land Use and Airfield Noise Contours

As shown on Figure 6-3 and detailed in Table 6-3, the most incompatible land use is residential. However, individual housing assessments were not conducted due to the costs involved in determining if they were built with sound attenuation standards, which have been required, at a minimum, since 1997 for the specific noise zone in which they are located. Residential units built following the DoD’s land use compatibility recommendations in Table 6-2 remain incompatible due to aircraft noise. There is no way to mitigate the sound outside a structure or residence. The compatibility guidelines are designed to promote the well-being of residents and acknowledge the impact aircraft sound can have on the enjoyment of indoor and outdoor activities.

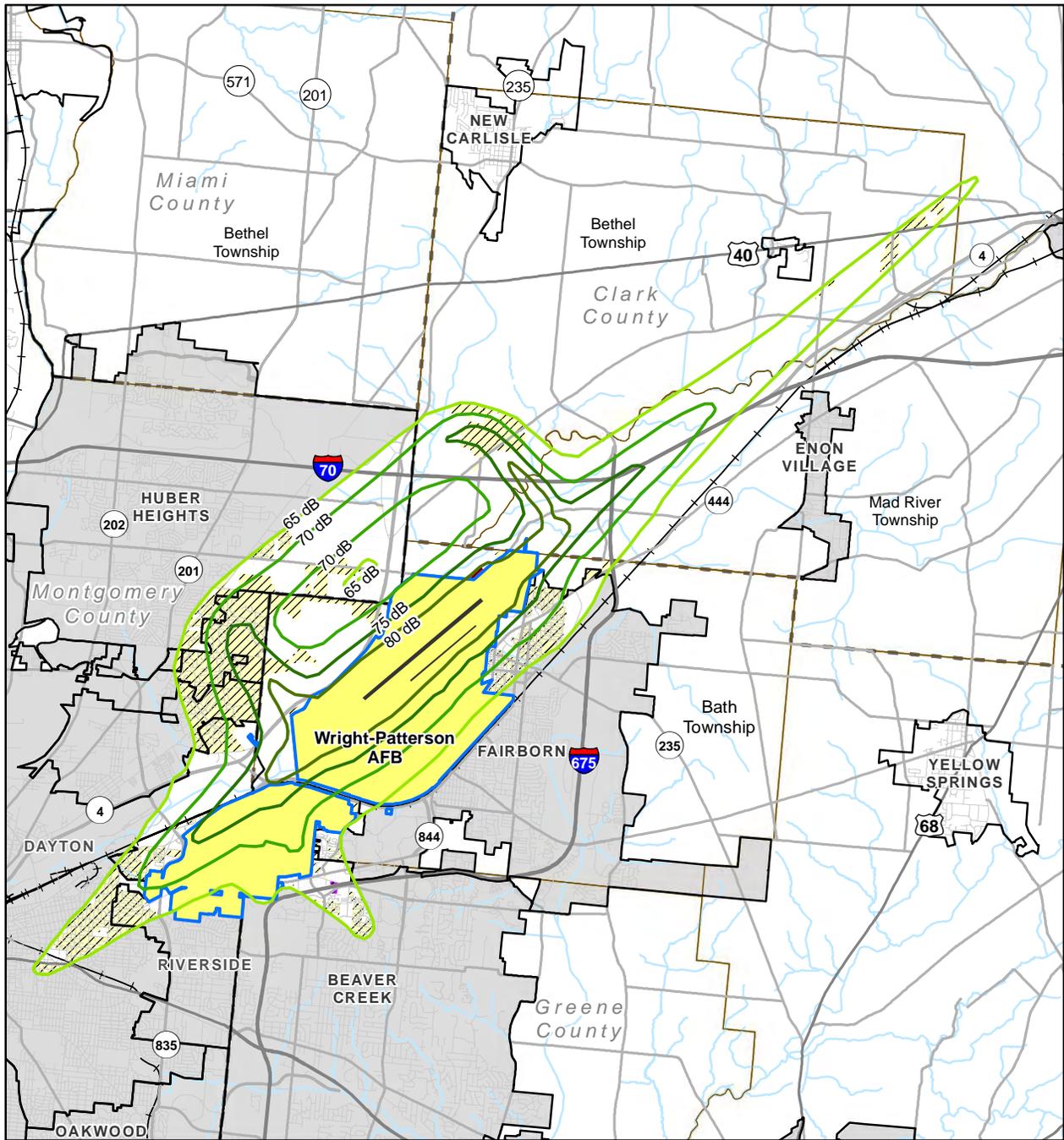
Table 6-3 Existing Incompatible Acreage within the Aircraft Noise Zones

Jurisdiction	Land Use	65-70 DNL	70-75 DNL	75-80 DNL	80+ DNL	Total Acres
Bath Township	Commercial				13.59	13.59
	Industrial	5.92				5.92
	Public/ Quasi-Public				1.43	1.43
	Residential	64.49	275.43	80.31	9.22	429.46
City of Beavercreek	Commercial	259.90				259.90
	Public/ Quasi-Public	26.19				26.19
	Recreation/Open Space	9.96				9.96
	Residential	116.56				116.56
	Transportation/ Communication/ Utilities	78.73				78.73
Bethel Township (Clark County)	Residential	304.21	134.58	132.89		571.68
Dayton	Residential	830.46	497.14	244.37		1,571.96

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Table 6-3 Existing Incompatible Acreage within the Aircraft Noise Zones (continued)

Jurisdiction	Land Use	65-70 DNL	70-75 DNL	75-80 DNL	80+ DNL	Total Acres
Fairborn	Industrial		.59			.59
	Residential	322.43	138.18	25.88		486.49
Huber Heights	Residential	278.43	236.34			514.77
Riverside	Residential	529.87	306.45	92.32		928.64
Total Acres		2,827.15	1,588.71	575.77	24.24	5,015.87



2022 Noise Contours
 65 dBA DNL
 70 dBA DNL
 75 dBA DNL
 80 dBA DNL

Generalized Existing Land Use
 Residential
 Commercial
 Industrial
 Public/Quasi-Public

Compatibility
 Compatible (White)
 Incompatible
 Conditionally Compatible

Runway
 Wright-Patterson AFB

City
 County
 Township
 Railroad



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.



Figure 6-3 Compatibility Assessment within the Aircraft Noise Contours

Roadway Capacity

Roadway capacity refers to the adequacy of existing freeways, highways, arterials, and local roads in providing sufficient mobility, connectivity, and access to military installations and points of interest in surrounding communities.

As urban development expands into rural areas, roads once used primarily to provide access for agricultural uses and limited local traffic begin to function as urban arterial roadways. These once-rural roads often become the main transportation corridors for all types of traffic – from residential to commercial trucking – and can assist or impede access to military installations. As transportation systems provide more capacity, these facilities may increase traffic flow leading to congestion.



Traffic volume associated with WPAFB impacts the local street network at WPAFB Area B.

RC-1

The level of WPAFB Area B traffic entering/exiting the base using Kauffman Avenue causes congestion affecting the adjacent residential neighborhoods to the east.

With over 30,000 Airmen and civilian and contractor employees, WPAFB is Ohio's largest single-site employer. Due to the large workforce employed inside and outside WPAFB, congestion related to the start and end of each business day is expected. Most vehicular movement in and out of the base does not disrupt residents going to and from work or dropping off and picking up children from school.

Roads around Areas A and B experience traffic congestion, which can create safety issues and increase travel times for traffic going to installations and around them. The areas are separated by SR-444, a common thoroughfare that connects Wright State University, local parks, various security entrances/exits, and the communities on either side of the Mad River. Concerning Area B, there has been a recent increase in the amount of traffic traveling to and from the installation of residents and employees using Kauffman Avenue/SR-444. Kauffman Avenue and SR-444 run directly along the fence line and are used by many residents, students, and employees to travel to work and school.

I-675 and I-844 are also used to access Areas A and B. Traffic exiting these highways causes backups and delays due to ID checks. Gate access issues include a surge in gate usage, lack of staff, or attempted unauthorized access. One of the top priorities at a military installation is keeping the installation secure, which involves screening vehicles and individuals passing through the entry gates. A single authorized vehicle entering the base with the proper credentials does not typically take long to process with the proper credentials; however, a gate's capacity during heavy traffic onto WPAFB may create congestion for those entering during peak travel times.

Safety

Safety zones are areas where development should be restricted due to the higher risks to public safety. Issues to consider include APZs, weapons firing range safety zones, and explosive safety zones.



SA-1

Assess incompatible development in the Accident Potential Zones.

Incompatible land uses in APZ I and APZ II create potential concerns for public health, safety, and welfare in the event of an aircraft mishap.

The land use northeast of Runway 23L includes several land use types. Although there is some development along the edges of the APZs, most of the land within the APZs remains open or used in a compatible manner.

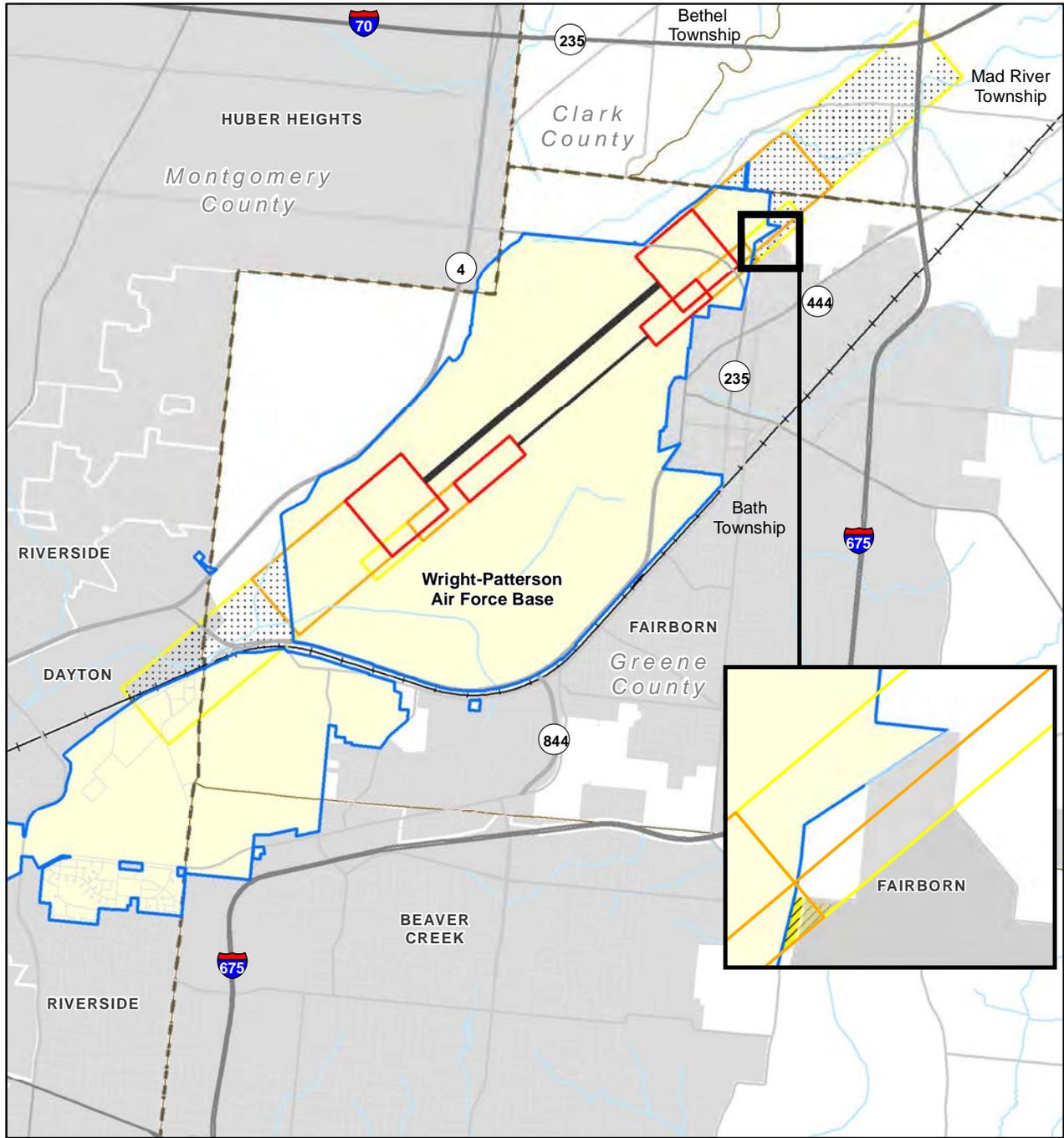
The APZ II area also reaches the I-70 and I-675 interchange, which has some commercial activities and land uses associated with transportation activities; however, transportation infrastructure is generally compatible as it does not include large concentrations of people. Overall, as shown on Figure 6-4, the safety zones north of WPAFB are relatively undeveloped, or the existing land uses are generally compatible with aircraft operations.

The City of Fairborn's Water Treatment Plant is located next to Sandhill Park on the eastern edge of the Class A safety zones. While the facility sits on the edge of APZ I, the Sandhill Road Water Treatment Plant draws water from the Mad River Buried Valley Aquifer through two wellheads. The remaining land in Greene County is composed of forested areas inside the APZs. In Clark County, the land is designated agriculture, and the Comprehensive Plan attempts to ensure the area remains minimally developed, seeking to keep it as agricultural land. Much of the land is located within the Mad River Floodway and has limited development potential.

To the south of WPAFB, the land is primarily public/quasi-public land associated with Huffman MetroPark and flood control areas (such as Rohrer's Island) along the Mad River. Overall, these areas are considered compatible with aircraft operations.

The potential for incompatible development increases when no regulations or limited zoning is in place to protect the safety zones. It is possible that a formalized coordination process between WPAFB and the surrounding jurisdictions could alleviate potential concerns by allowing WPAFB to review the proposed development in an advisory capacity and provide a compatibility assessment of the potential development proposal. For example, industrial uses in APZ II are allowed, provided the floor area ratio (the ratio of a building's total floor area to the size of the parcel upon which it is built) is reduced, and the proposed land use limits the concentrations of people to 50 or less per acre.

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Generalized Existing Land Use
 Residential
Compatibility
 Compatible
 Incompatible
 Conditionally Compatible

Airfield Safety Zones
 Clear Zone
 Accident Potential Zone I
 Accident Potential Zone II

Runway
 Wright-Patterson AFB
 City
 Township
 County
 Railroad



Source: Matrix Design Group, 2023. Wright - Patterson AFB, 2023.



Figure 6-4 Compatibility Assessment within the Accident Potential Zones



Assess bird and wildlife attractants near the runway.

SA-2

While conservation areas surrounding WPAFB reduce the potential for development encroachment, they are also habitats for birds and wildlife that can create hazards for aircraft strikes (Bird/Wildlife Aircraft Strike Hazards).

WPAFB has an active Bird/Wildlife Aircraft Strike Hazard Plan. It provides a program to minimize the hazards of bird and wildlife strikes to aircraft at WPAFB. The Plan is based on hazards from local wildlife, including resident and migratory bird populations. Implementation is ongoing, and certain portions of the Plan are active during the bird migration season.

The communities around WPAFB have done a commendable job protecting areas near WPAFB, including various parks and undeveloped open space. A significant amount of agricultural land north of WPAFB in Clark County is not anticipated or targeted for development. The Mad River runs through Clark and Montgomery Counties, and the floodways along the river basin are incompatible with many types of development and will remain undeveloped.

The rivers, open space, undeveloped land, agriculture uses, and parks provide excellent habitats for birds and wildlife. Wildlife and birds pose an ongoing threat to aircraft operations. The number of bird strikes, as shown in Table 6-4 for the past five years, peaked in 2018 at 46 incidents. Since 2019, annual bird strikes have not exceeded 20 incidents. It is important to note that bird strikes that directly hit a propeller or a jet engine intake can cause aircraft failure in flight; the birds do not have to be large to cause significant damage.

Table 6-4 Reported Bird Strikes at WPAFB, 2018-2022

Incident Type	2018	2019	2020	2021	2022
Bird Strike	46	18	7	15	19

The communities and WPAFB can develop a memorandum of agreement to manage bird habitats or attractants that increase hazards along the flight arrival and departure paths and closed patterns. Incorporation of a BASH military influence area (MIA) that restricts or requires mitigation strategies for landfills, transfer stations, golf courses, wetlands, stormwater ponds, waste disposal operations, wastewater treatment facilities, dredge disposal sites, and other potential land use types that attract congregations of birds along frequently used flight paths is recommended. The BASH MIA should be incorporated into the local code of ordinances to provide guidance for developers and landowners.

Dust/Smoke/Steam



Dust/Smoke/Steam interference with aircraft navigation.

DSS-1

Dust, smoke, and steam are airborne particles that can reduce visibility, impair aircraft systems, and create hazardous conditions for flight operations at WPAFB. These particles can originate from various sources such as nearby industrial activities, construction sites, wildfires, or natural phenomena, posing risks to aircraft, personnel, and infrastructure.

Particles of dust and other materials found in the air are referred to as particulate matter. PM10 and PM2.5 are considered toxic, with particles less than 10 μm (micrometer) in diameter and less than 2.5 μm , respectively. They can be caused by many phenomena, including vehicular traffic on unpaved roads and surfaces, wind blowing over unpaved and unvegetated areas, vehicle maneuvers, explosions, aircraft operations, and earth-moving activities such as construction, demolition, and grading. Smoke can be created by fire (controlled burns, agricultural burning, and artillery exercises), industrial activities, and other processes. Similarly, steam can be created by industrial and other activities and is more prominent during cooler weather. Dust, smoke, and steam present compatibility issues if they are sufficient in quantity to impact flight operations, such as by reducing visibility or if they damage equipment.

Potential risks associated with dust, smoke, or steam include:

Reduced Visibility: Dust, smoke, and steam can reduce visibility, especially during takeoff, landing, and low-altitude maneuvers, increasing the risk of collisions, runway incursions, and spatial disorientation for pilots.

Aircraft Performance: Airborne particles can impact aircraft performance by affecting engine intake, leading to reduced engine efficiency, increased maintenance requirements, and potential power loss.

Air Quality Concerns: High concentrations of dust, smoke, or steam can degrade air quality, posing health risks to personnel, affecting equipment reliability, and necessitating operational restrictions or suspensions.

Safety and Mission Impact: Hazardous atmospheric conditions due to airborne particles can disrupt flight schedules, delay missions, and compromise operational readiness, impacting mission success and personnel safety.

Impact on Flight Operations: The hazards posed by dust, smoke, and steam can significantly impact flight operations at WPAFB:

- Increased risk of accidents, incidents, and near-misses due to reduced visibility and impaired aircraft performance.
- Flight delays, diversions, or cancellations in response to hazardous atmospheric conditions.
- Operational restrictions or limitations on flight activities to ensure safety and mitigate risks associated with airborne particles.



7

Implementation Plan

The Implementation Plan presents the recommended courses of action (strategies) developed through collaboration among project partners. Since the Wright-Patterson AFB CUP is the result of a collaborative planning process, the strategies truly represent a consensus-based plan and a realistic and coordinated approach to compatibility planning.



The Implementation Plan is the heart of the CUP. This Plan includes various actions that promote education, communication, compatible land use, and resource planning around WPAFB. Upon implementation of the strategies, existing and potential compatibility issues arising from the civilian/military interface can be eliminated or significantly mitigated.

7.1 Implementation Plan Guidelines

The key to a successful implementation plan is balancing the needs of all the involved stakeholders. To produce an equitable plan, several guidelines were used as the basis for strategy development:

- Recommended strategies must not result in the taking of property value, meaning rendering the property undevelopable or unable to achieve economic gain by removing development rights defined by state law. Some recommended strategies may involve establishing conservation easements on private property, but only if landowners are willing to take such actions.
- To avoid issues relating to the non-compliance of existing land uses, any zoning amendments or regulatory changes should include “grandfather” clauses to allow existing legal uses to be retained.
- Any proposed regulatory or policy guidance changes, such as zoning ordinances or general/comprehensive plans, should not affect properties with existing entitlements or previously approved for development.
- To minimize regulation, some strategies are recommended only for the specific geographic areas within which relevant issues occur.
- Some recommended strategies can be implemented only with new legislation.
- Any strategy involving developing new regulatory measures or updating existing ones, such as amending zoning ordinances, adding new zoning overlay districts to existing zoning ordinances, or amending municipal guidance documents, such as community general plans, county comprehensive plans, and local regulations, may involve public hearings and the notification of affected and potentially affected property owners or land management entities before implementation.
- As in other planning processes that include numerous stakeholders, the challenge here is to create a solution or strategy for outcomes that meet the needs of all parties. Instead of eliminating strategies that do not have complete buy-in from all stakeholders, each strategy may be further refined to create multiple approaches that address the same issue in tailored, community-specific ways.
- Since state and federal regulations are subject to change, implementing jurisdictions or parties should ensure no conflicts have arisen between strategies and local, state, or federal laws before implementation.

7.2 How to Read the Implementation Plan

The strategies presented in this chapter address the compatibility assessments identified in Chapter 6.

These strategies constitute the CUP Implementation Plan. The purpose of each strategy is to:

- Facilitate sustained, enhanced communication and collaboration;
- Avoid future actions, operations, or approvals that may cause incompatibility; and
- Eliminate or reduce existing compatibility concerns.

The strategies in this chapter strengthen the relationship between communities, agencies, organizations, and WPAFB to promote compatible development.

The strategies include information on when and how they should be implemented and are grouped according to the compatibility finding they address. The following paragraphs provide an overview of how to read the Implementation Plan:

Issue Box. The issue box identifying the specific compatibility issue being addressed is presented before each recommended set of strategies.

Strategy Box. The descriptive title of each strategy is presented in bold in the strategy box. Each title starts with an alphanumeric identifier that provides an easy reference and further encodes the related, general compatibility factor abbreviation and a unique numeric identifier (e.g., COM-1, COM-1B, etc.). This descriptive title is followed by the complete strategy statement or recommended action.

Strategy Rows. Each strategy is presented in two rows in the table. The first row includes a description of the strategy and the parties responsible for its implementation. The second row identifies the type of strategy, the timeframe suggested for implementation, and the level at which implementation is prioritized.

Party Column. A column along the right side of each strategy box identifies the stakeholders who should serve as either a "Responsible Party" or a "Partner." Responsible Parties implement the strategy, while Partners play supporting roles.

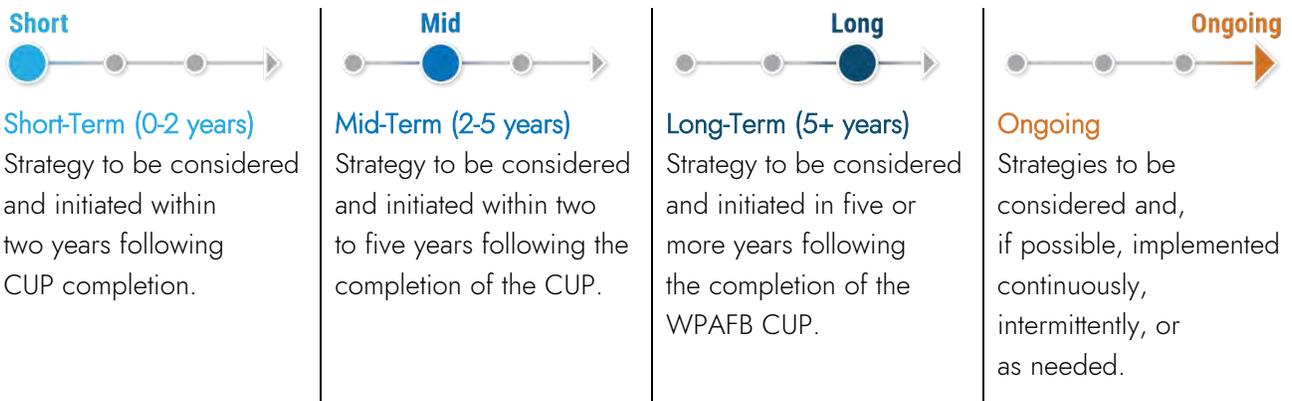
Strategy Type. This box identifies the type of tool that a strategy constitutes. Strategy types are indicated by the icons shown below. Some strategies constitute multiple types, in which case multiple icons are listed.

- | | | | |
|---|------------------------|---|---------------------------------|
|  | Acquisition |  | Communication |
|  | Coordination |  | Easement |
|  | Education/Awareness |  | General Plan/Comprehensive Plan |
|  | Legislative |  | Planning |
|  | Partnership |  | Process |
|  | Policies |  | Regulations |
|  | Real Estate Disclosure |  | Zoning |
|  | Study | | |

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Strategies marked with the  icon on the left may be eligible for follow-on implementation funding from the OLDCC. Stakeholder organizations that take the lead for implementation may apply for and be awarded OLDCC or other federal and state grants. Designation via this icon in the CUS Implementation Plan represents a potential funding opportunity, with eligibility determined by the granting agency or agencies. It should be noted that the OLDCC funds communities and local government organizations but does not fund the U.S. Air Force or other DoD entities.

Timeframe Box. This box presents the recommended timeframe in which a strategy should be implemented. The timeframes represent multi-year periods during which strategies should be initiated or indicate actions that should be ongoing, whether continuous, intermittent or as needed:



Priority Box. Similar to the level of importance, this box indicates the degree to which the implementation of a strategy is a priority. Implementation may be a low, medium, or high priority.



7.3 Implementation Plan

The Implementation Plan is centered around an active CUP Implementation Phase Committee meeting regularly using an existing forum or after establishing a new one. The proposed WPAFB CUP Implementation Phase Committee should consist of the WPRCOG and additional partners collaborating to implement the identified strategies to promote the community's health, safety, and welfare. **The WPAFB CUP encompasses a range of strategies aimed at ensuring the effective execution of the Plan during the implementation phase.** These strategies also protect the operational integrity of WPAFB, its unique operational missions, and the flight training mission within the Project Area. This purpose-built committee should establish the foundation for the transition to a standing WPAFB Partnership Committee.

Implementation Strategies

These strategies are designed to safeguard the community's interests and promote the operational integrity of WPAFB for its current and future defense, innovation, and training missions. It is important to note that some of these strategies are extensions or enhancements of the existing Airport Zoning Regulations.

The structure and layout of the strategies below follow the sequence of issues presented in Chapter 6: Compatibility Assessment.

Social Strategies

These strategies actively seek opportunities to enhance relations between jurisdictions and the military within the Project Area. Each strategy facilitates robust collaboration among the various entities and organizations within the CUP Project Area. The primary objective of these social strategies is to develop proactively and enhance symbiotic relationships between the military and the surrounding jurisdictions. These relationships effectively blend the community's needs with military objectives and promote compatible growth within the Project Area.



Communication and Coordination Issues and Strategies

Issue COM-1

External coordination with WPAFB tenants is inconsistent.

WPAFB's extensive scale, numerous tenants, diverse mission sets, and operational presence can lead to coordination and collaboration challenges outside the fence line.

Strategy COM-1A

Identify a point of contact and create a pamphlet with WPAFB positions and contact information that agencies, developers, jurisdictions, organizations, residents, and WSU can utilize to contact WPAFB.

The 88th Air Base Wing established a Strategic Initiatives Office that directly reports to the commander and vice commander.

However, the Strategic Initiatives/Public Affairs Office may be unable to provide outreach and feedback to all inquiries directed to the base. Mapping out and establishing/maintaining a resource booklet with WPAFB staff positions and contact information can support community inquiries, establish communication channels beyond "informal communication channels," and establish formal communication and outreach channels.

The strategic initiatives officer or position(s) identified by the commander can handle and facilitate internal communications between the many tenants on the base, maintain/update the pamphlet, and support a unified message to regional communities.

The Installation Planner (88CEG/CENPL) facilitates communication and provides an avenue for communities, agencies, organizations, WPAFB, and the various internal tenants to enhance opportunities for successful collaboration and compatible growth. These duties can be updated to incorporate regular annual meetings.

Responsible Party

- WPAFB

Partners

- WPAFB Tenant Units

Strategy Types



Timeframe



Priority



**Strategy
COM-1B**

Establish/transition to the WPAFB Partnership Committee.

A Partnership Committee should be established, such as a subcommittee of the COG, once the implementation phase has been funded. The Committee can address future compatibility issues as they arise and oversee the execution of the Implementation Plan. The WPAFB Partnership Committee should be established to:

- Maintain efficient and effective coordination among the CUS partners and other affected stakeholders;
- Enhance long-term coordination on military compatibility issues;
- Provide an open, recurring forum for communication and coordination between the military base and community partners; and
- Identify and pursue grants.

The issues discussed and addressed by the Partnership Committee should focus on resiliency, opportunities to enhance or provide redundant services, development and procurement of grant funding, additional ways to streamline and improve existing communication, identification of mutually beneficial solutions, and the execution of the Implementation Plan to protect the military missions and support economic growth and prosperity for the regional communities. The Installation Planner can staff an annual meeting of the Partnership Committee.

Responsible Party

- WPRCOG

Partners

- Wright-Patterson AFB
- Clark, Greene, Montgomery, and Miami Counties
- Dayton Development Coalition
- Miami Conservancy District
- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy COM-1C

Develop and maintain mutual aid agreements.

The development and maintenance of mutual aid agreements with local emergency services, law enforcement agencies, and first responders can ensure a coordinated response in case of emergencies or disasters. The agreements can guide communication and collaboration protocols and requirements.

For the mutual aid to be successful, the implementation should include:

- Collaboration with local emergency management agencies and develop integrated emergency preparedness plans that account for the base's resources and capabilities; and
- Joint exercises and drills involving base and local emergency services to enhance coordination and response capabilities during emergencies.

Responsible Party

- WPAFB Partnership Committee

Partners

- WPCOG
- Other public agencies as needed

Strategy Types



Timeframe



Mid

Priority



**Strategy
COM-1D**

Enhance public engagement activities.

The WPAFB installation planner can coordinate directly with the Public Affairs Office to implement additional outreach and information-sharing objectives to boost transparency and collaboration within the region.

This may include:

- Development and implementation of clear communication protocols to ensure that all tenant organizations and stakeholders are aware of events, activities, and changes that may impact them or the local community.
 - This can include regular meetings, email updates, and an online platform for information sharing.
- Engaging in community outreach programs, including educational initiatives to increase public awareness about the base’s mission and its importance to the region.
- Exploring opportunities for sharing resources and sustainable practices with the local community, such as water and energy conservation, to strengthen relations and contribute to the community’s well-being.
- Hosting periodic meetings with local community leaders and residents to address concerns, share updates on base activities, and solicit feedback on issues affecting the community.
- Implementation of shared communication and information platforms to facilitate real-time information sharing and collaboration between tenant organizations and external stakeholders.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- WPAFB PAO
- Other public agencies as needed
- Other social media representatives as needed

Strategy Types



Timeframe



Priority



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Strategy COM-1E

Establish a recurring agenda item for compatibility at WPCOG meetings.

The WPCOG can create a recurring agenda item to discuss compatibility issues with and around the base focusing on both existing and potential issues.

WPAFB can attend these meetings as a non-voting participant of the COG and can provide updates on hazards that impact the operational capabilities and capacities at WPAFB.

The discussion should include, at a minimum, issues such as the environment, climate, construction, and aircraft noise.

Additional potential topics include:

- Sharing of short- and long-term visions and goals;
- Changes in federal agency, DoD, and WPAFB policy and guidelines relevant to the group;
- Real property developments at WPAFB; and
- Changes to regional comprehensive plans, master plans, transportation plans, zoning, development projects, and capital improvement plans.

Responsible Party

- WPCOG

Partners

- WPAFB
- Other public agencies as needed

Strategy Types



Timeframe



Priority



Additional Relevant Strategies

COM-4A Establish a CUP Implementation Phase Committee.

The Committee will identify a forum to increase communication and collaboration, execute the Implementation Plan, and secure grants. The Implementation Committee is designed to initiate and complete the implementation phase and can be phased into the Partnership Committee, which focuses on long-term compatible growth.

COM-4C Identify funding for implementing the CUP strategies.

Securing additional funding, such as funds to execute the implementation phase, is the key to a successful Implementation Plan. Implementation funding can also provide funding for augmented (temporary) staff, such as liaison officers, to fill identified staffing needs.

Issue COM-2	No standardized development review process exists.
	Many neighboring communities and some regional agencies do not engage in standardized communication with WPAFB regarding development and planning processes.

**Strategy
COM-2A** **Develop a courtesy review process with regional planning staff.**

WPAFB, through its community planner or civil engineering planning staff, should establish a courtesy communication process that includes points of contact and triggers for development proposal reviews. A standardized courtesy review process should be created for all communities to streamline efforts and mitigate issues. This process should be flexible to account for differences between cities and counties.

The Memorandum of Understanding (MOU) between WPAFB and each neighboring jurisdiction should outline the roles, responsibilities, and processes for courtesy reviews of development proposals. The agreement should include:

- Point of contact and information for each agency.
- Roles and responsibilities for addressing compatibility issues.
 - Developing a set of consistent review criteria and standards for evaluating development proposals.
- Establishing a shared online platform or database to access development proposals, environmental impact assessments, and relevant documents.
 - Additional details can be found in COM-2C.
- A focus on development proposals that impede navigable airspace, residential units within the noise contours, and the safety zones.
- Creation of a review timeline.
 - Prioritize and streamline the review process for developments that impact or potentially impact the base's operations.

Responsible Party

- WPAFB

Partners

- Local jurisdictional planning staff

Strategy Type



Timeframe



Priority



Strategy COM-2B

Collaborate and enhance awareness of compatible land use planning.

WPAFB, the WPCOG, and regional jurisdictions can collaborate to develop an updated land use master plan for land within the Airport Zoning Regulations and areas within the HAFZ. The six unique districts in the Airport Zoning Regulations currently require building standards on development to include sound-reduction measures, ensure flight safety in the runway protection zones, and limit heights for structures built within the imaginary surfaces and transitional planes.

The community planner or the civil engineering planning staff should work with the Airport Zoning Board and other agencies/entities to communicate the importance of keeping the areas of concern free from incompatible development and to promote compatible development within the areas of concern.

As mentioned in COM-2A, the development of a formal agreement or MOU will assist in identifying contact lists and coordination protocols. Additional actions WPAFB, WPRCOG, and the WPAFB Airport Zoning Board can take to bring awareness to the existing regulations include the following:

- Establish a recurring meeting schedule to discuss development proposals, share information, and discuss best practices and engage techniques and strategies to promote compatible development around the base.
- Implement protocols that require developers to notify neighboring communities early in the planning stages of any proposed development.
- Provide regular reports to the public and stakeholders on the outcomes of the development review process, emphasizing transparency and accountability.
 - Conduct public outreach and educational programs to engage the local community in the development review process, ensuring that their concerns and interests are considered.

Responsible Party

- WPAFB

Partners

- WPAFB Airport Zoning Board
- WPRCOG

Strategy Types



Timeframe



Short

Priority



Medium

**Strategy
COM-2C**

Develop a notification regional web portal.

WPRCOG can develop a secure and accessible development notification web portal.

The portal can include the geospatial location of each development project and flags to indicate if the parcel is within an area that impacts or is potentially impacted by operations at WPAFB.

The portal should include guidance on next steps, a review the timeline, and visualization of the imaginary surfaces, safety zones, noise zones, and BASH relevancy area.

The ability to create a “review ticket” that is sent to the correct jurisdiction with next steps provides an open and transparent review process. It also allows for the WPRCOG, WPAFB Airport Zoning Board, and local communities to have best practices established and to track proposals that pose compatibility concerns to WPAFB operations.

Responsible Party

- WPRCOG

Partners

- WPAFB Airport Zoning Board

Strategy Types



Timeframe



Priority



Strategy COM-2D

Establish a WPRCOG technical subcommittee to the Airport Zoning Board.

The WPRCOG was established to promote compatible development around the base, establish a uniform governmental approach by the community around WPAFB, and increase collaboration of neighboring jurisdictions. The WPRCOG comprises five cities and one township.

The existing Airport Zoning Board and the associated enforcement of the regulations are the authority of the counties. Creating a technical subcommittee to provide land use recommendations to the Board under the authoritative umbrella of the WPRCOG allows communities to track and share best practices and ensure that:

- Developments within imaginary surfaces are subject to height limitations and FAA requirements;
- Developments within noise footprints are subject to sound-reduction requirements and land use compatibility guidelines; and
- Developments within safety zones are subject to compatibility guidelines.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Issue WPAFB outreach with the public is viewed as limited.

COM-3 Residents have noted aircraft noise is an issue for neighborhoods around the base. Additionally, many residents expressed concerns about and a lack of information regarding PFAS compounds stored and used at WPAFB since the 1970s.

Strategy Develop an aircraft noise fact sheet.

COM-3A Create a one-page fact sheet to provide an overview that presents, at a minimum, information on aircraft noise around WPAFB. The fact sheet should include how to understand sound levels, the impacts of living near an airbase, sound mitigation strategies for residences within the noise contours, and point of contact information at the base for the public.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
Medium

Strategy COM-3B

Establish a dedicated web page for aircraft noise.

Establish a public web page to facilitate information sharing and opportunities for comment and feedback. At a minimum, the web page should include:

- A PDF version of the aircraft noise fact sheet;
- Construction guidelines found in the Airport Zoning Regulations;
- Communication regarding noise mitigation efforts to reduce the impact of aircraft noise on nearby neighborhoods;
- Information about flight schedules and plans for noise reduction; and
- Brief details on how WPAFB mitigates and alerts the community about noise events, including contact information for inquiries related to aircraft noise.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed
- Other social media representatives as needed

Strategy Types



Timeframe

Short



Priority



Strategy COM-3C **Develop a PFAS fact sheet.**

Create a one-page fact sheet to provide an overview that presents, at a minimum, information on PFAS compounds. This can include the location of known sites, remediation efforts, facts about the safety and future security of the local drinking water, future efforts to mitigate leaching, and contact information for additional information.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type


Timeframe

 Short

Priority

 Medium

Strategy COM-3D **Create a public advisory board for the WPAFB CUP.**

An advisory board can exist to participate in the implementation phase of the WPAFB CUP. The board can assist in reducing misconceptions, boost transparency, and increase the community's awareness of ongoing and future compatibility efforts.

The advisory board would receive updates via email, participate in public meetings and focus groups, and assist in survey development to gather input, feedback, and concerns. The advisory board should be an additional resource to spread the word about important milestones and actions.

The public advisory board, which will participate as a non-member while overseeing the implementation phase, should include members who are residents of the community, non-elected, and interested in collaborating with the Partnership Committee. Furthermore, they must be able to meet the engagement requirements associated with being on the board.

Responsible Party

- WPAFB Partnership Committee

Partners

- Local citizens

Strategy Type


Timeframe

 Short

Priority

 Medium

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Additional Relevant Strategies

COM-1A Appoint or designate a community planning liaison officer.

The planning liaison officer can facilitate communication and address residents' concerns regarding noise and chemicals and act as a base representative and point of contact for residents, businesses, jurisdictions, and other relevant agencies and organizations.

COM-4E Create a sharing portal.

A sharing portal on the WPRCOG website will allow interested community members the ability to view progress, best practices, and other important details on the ongoing implementation phase.

Issue COM-4

There will need to be an effective collaboration plan to implement the recommendations.

Implementing the CUP recommendations will require ongoing coordination and collaboration between equity stakeholders to monitor progress, address potential challenges, and share lessons learned and successes that other CUP partner communities may replicate.

Strategy COM-4A

Establish a CUP Implementation Phase Committee.

The existing CUP Steering Committee members should be invited to become charter members of the WPAFB CUP Implementation Phase Committee.

As the Committee is established and evolves, new stakeholder groups should be invited to join/participate as appropriate. The WPAFB CUP Implementation Phase Committee should meet regularly, as agreed upon by the Committee.

The Committee should review the CUP recommendations and track the implementation efforts and accomplishments. One vital Committee goal is monitoring emerging issues from both the community and Air Force perspectives to ensure long-term military operational utility and compatibility as missions evolve.

The WPRCOG is recommended as the lead agency in developing and managing the CUP Implementation Phase Committee to continue the momentum created through the CUP process.

The CUP Implementation Phase Committee is a transitional precursor to standing up a WPAFB Partnership Committee.

Responsible Party

- WPRCOG

Partners

- Wright-Patterson AFB
- Clark, Greene, Montgomery, and Miami Counties
- Dayton Development Coalition
- Miami Conservancy District
- Other public agencies as needed

Strategy Types



Timeframe



Priority



**Strategy
COM-4B**

Develop a charter.

The WPAFB Implementation Committee members should develop a charter that formalizes the group’s mission, objectives, and operational standards. The charter should contain at least the following information:

- Committee purpose
- Committee membership
- Point of contact and contact information for each organization/partner, and a membership directory
- Agency/partner and membership roles and responsibilities in addressing compatibility issues, clearly defining the objectives and expected outcomes
- Meeting frequency
- Triggers for coordination and communication (e.g., infrastructure planning, water resources planning, economic development, mission changes, etc.)

The Committee can create project-specific teams composed of representatives from different equity stakeholder groups. These teams can focus on specific recommendations and work together to implement them effectively.

The charter can include how, or a date when, the Implementation Committee will transition into the Partnership Committee.*

The charter should include clear communication protocols to ensure that all tenant organizations and stakeholders are aware of events, activities, and changes that may impact them or the local community. This should include regular meetings, email updates, and an online platform for information sharing.

**Transitioning to the Partnership Committee is recommended once the CUP implementation phase has received funding, is in progress, or is completed.*

Responsible Party

- WPRCOG

Partners

- WPAFB
- Clark, Greene, Montgomery, and Miami Counties
- Dayton Development Coalition
- Miami Conservancy District
- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



High

Strategy COM-4C

Identify funding for implementing the CUP strategies.

The Committee can consider opportunities for securing additional funding (such as OLDCC implementation funding) and resources from external sources, including government grants, private foundations, or corporate partnerships to implement strategies. Some funding sources that can be utilized to assist in addressing key CUP implementation recommendations include:

- OLDCC CUP implementation grants
- The REPI Program, and
- The Defense Community Infrastructure Program (DCIP)

Many other opportunities exist for funding projects on and off base. It is essential to understand the opportunities and the guidelines for application well in advance of the deadline for submission. Coordination and communication will be imperative to successful funding requests.

Responsible Party

- WPAFB Implementation Phase Committee

Partners

- Other public agencies as needed

Strategy Types



Timeframe



Priority



**Strategy
COM-4D**

Develop and fortify WPRCOG revenue streams.

The WPRCOG is a recent governmental entity that is a collection of the various jurisdictions around WPAFB.

As the WPRCOG grows and expands, funding to ensure operations and maintenance may become critical in the operational capabilities and capacity of the WPRCOG.

Jurisdictions can develop a sustainability plan to ensure that the operations and maintenance of the WPRCOG are solvent. This can include member dues. An additional way to build solvency is by developing various funding streams.

Funding options include the following:

- Sales tax of .25% for all participating jurisdictions
- Fixed development review fee
- Grant funding
- Bonds or other voter-approved funding

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy COM-4E	Create a sharing portal.	<p>The WPCOG can expand its website to include a web page that provides information on:</p> <ul style="list-style-type: none"> ▪ Best practices, successes, and lessons learned among partners to help other CUP communities replicate successful strategies; and ▪ Establishing a mechanism for sharing data, tracking strategies, and reporting on the impact of the implementation phase to ensure that all partners have access to the information needed to make informed decisions. 	<p>Responsible Party</p> <ul style="list-style-type: none"> ▪ WPAFB Partnership Committee <p>Partners</p> <ul style="list-style-type: none"> ▪ Other public agencies as needed
	<p>Strategy Type  Timeframe  Priority </p> <p style="text-align: center;">Short Medium</p>		

Additional Relevant Strategies	COM-1B Establish/transition to the WPAFB Partnership Committee.	<p>To continue the collaborative efforts underway and to form a partnership extending beyond CUP implementation, establish a WPAFB Partnership Committee to collaborate on future compatibility issues and promote long-term compatible growth inside and around WPAFB.</p>
	COM-1E Establish a recurring agenda item for compatibility at WPCOG meetings.	<p>Establishing periodic meetings with a standing agenda item to discuss compatibility concerns and allow each partner to review progress, discuss challenges, and share updates.</p>

**Issue
COM-5**

There needs to be an increase in public awareness of the WPAFB Airport Zoning Regulations.

There needs to be a more enhanced approach to public awareness of the Airport Zoning Regulations for transparency, promoting compatible land use and economic development, protecting property values, and strengthening community trust.

**Strategy
COM-5A**

Develop a public education campaign for Airport Zoning Regulations.

The WPRCOG should create an outreach plan to socialize the WPAFB Airport Zoning Regulations with residents within their respective communities. The public outreach program can include direct presentations to realtors and developers and education sessions with staff from townships and cities to educate the public and residents. This can be supplemented with informational brochures to be distributed by mail and social media and hosted on the various social platforms of the regional jurisdictions.

Public events can be organized as public information sessions or workshops to explain Airport Zoning Regulations, their importance, and how they impact the community. These sessions should be interactive to answer questions and address concerns.

Engagement with community organizations, neighborhood associations, and local chambers of commerce is critical to spread the word and increase awareness about the importance of the Airport Zoning Regulations.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Strategy COM-5B Create an Airport Zoning Regulations brochure.

The WPRCOG can create user-friendly brochures, pamphlets, or online resources that provide an overview of the Airport Zoning Regulations. Make these materials readily available to residents, businesses, and local organizations.

The airport zoning administrator for each community should be identified and contact information should be easily available.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy COM-5C Locally adopt the Airport Zoning Regulations.

The townships, cities, and villages within the WPAFB airport imaginary surfaces can formally adopt the WPAFB Airport Zoning Regulations.

Adoption and integration of the height, safety, and sound regulations will remove any ambiguity and improve adherence to and compliance with existing countywide regulations.

Responsible Party

- Local jurisdictions

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy COM-5D **Incorporate the Airport Zoning Regulations into plans and GIS portals.**

The developable height restrictions and zoning districts should be incorporated into comprehensive plans, master plans, and other general plans and studies that are in use by the regional jurisdictions.

This ensures transparency in the decision-making process related to zoning regulations.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
High

Strategy COM-5E **Update the existing WPAFB Airport Zoning Regulations.**

Given the age and limitations of the 1997 Airport Zoning Regulations, it is crucial to update them using digital technology to align with current DoD guidance. The revision should accurately reflect airfield safety zones and imaginary surfaces, incorporating dynamic height calculations. Stakeholder engagement and education are essential for effective implementation. This proactive approach will enhance aviation safety and support sustainable development while safeguarding community interests.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
High

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Strategy COM-5F

Partner with media outlets.

In conjunction with COM-5A, the WPRCOG can partner with media outlets, including newspapers and radio and TV stations, to feature stories and interviews about Airport Zoning Regulations and their impact on the community.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

**Strategy
COM-5G**

Enhance community engagement procedures.

The WPRCOG can partner with jurisdictions to increase transparency and awareness of the Airport Zoning Regulations by:

- Establishing a clear mechanism for residents to provide feedback, ask questions, and report concerns regarding the regulations;
- Ensuring that responses are prompt and informative;
- Providing regular updates on any changes or amendments to the regulations;
- Keeping the community informed about evolving policies and their implications; and
- Reaching out to property owners directly to inform them of the regulations and their rights and responsibilities as landowners in airport influence areas.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



**Additional
Relevant
Strategies**

COM-1A Appoint or designate a community planning liaison officer.

The planning liaison officer provides an additional resource as an advocate dedicated to sharing available resources to protect WPAFB and promote compatible development around the base.

COM-2A Develop formal coordination processes with regional planning staff.

A formalized coordination process between WPAFB and local jurisdictions increases awareness of the zoning regulations and height restrictions with jurisdictional planning staff, which increases informal socialization of the protections within the community.

COM-2C Develop a notification regional web portal.

An easily accessible web portal lets users quickly visualize if a parcel exists in a regulated area and reduces sunk costs (by investors/residents).

COM-6B Formalize the review process.

A formalized review process for development applications will streamline the process, reduce staff review time, and develop best practices for regional jurisdictions.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Issue COM-6

There is a lack of inclusivity on the WPAFB Airport Zoning Board.

The Airport Zoning Board was established to enact the 1997 Airport Zoning Regulations and has oversight and participation from counties surrounding WPAFB but limited awareness among townships and cities. This can create development challenges for local governments when they provide development guidance.

Strategy COM-6A

Expand Board membership to include townships, cities, and villages.

The WPAFB Airport Zoning Board is the administrator of the WPAFB zoning districts and height restrictions. The Board acts as the compliance administrator for the maps and regulations. Changes to the maps and regulations must be approved by the Board.

The inclusion of additional jurisdictions will enhance collaboration with local governments in the review and amendment of the regulations. By increasing membership, the local jurisdictions can assist in increasing awareness and compliance with the existing regulations and promote compatible development around WPAFB.

Responsible Party

- WPAFB Airport Zoning Board

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

**Strategy
COM-6B**

Formalize the review process.

The WPAFB Airport Zoning Board delegates the authority of the zoning administrator to the local jurisdiction. This decentralized approach can lead to lack of communication with WPAFB on development proposals that create a hazard to flight operations.

Formalizing the review process will create administrative records that are easily accessible, allowing the various jurisdictions to share data and analysis and best practices and understand development trends that may impact flight operations at WPAFB. This will also allow the Board to have a quickly accessible database of development proposals for review when determining the need to update, enhance, or remove existing regulations.

Responsible Party

- WPAFB Airport Zoning Board

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Additional Relevant Strategies

COM-2A Develop formal coordination processes with regional planning staff.

Develop a formal process between jurisdictions and WPAFB to include the military review and feedback on development proposals. WPAFB can provide a risk assessment for the proposal to assist the decision-making process. This will also reduce and fill gaps that exist in the Airport Zoning Board, which currently only consists of county officials, as WPAFB should be consulting (on an as-needed basis) with local jurisdictions on development proposals that may pose a risk to the operational capabilities and capacities at the base.

COM-2D Transfer the Airport Zoning Board into the WPCOG.

Bring the WPAFB Airport Zoning Board, if feasible, into an entity that comprises all jurisdictions within the area of concern, establishes synergies, and enhances inclusivity.

COM-5A Develop a public education campaign for Airport Zoning Regulations.

Inclusivity is a precursor to collaboration, and together, unified communities can promote compatible growth around WPAFB, boosting the regional economic output.

COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.

Adopting and owning the Airport Zoning Regulations at the local level is more likely to occur if the Board is broadened to include all jurisdictions. This may also be instrumental in the adoption and implementation of the existing zoning regulations and future updates.



Cultural Resources

Issues and Strategies

Issue CR-1

There is potential for enhanced public awareness of Air Force-related cultural resources.

Enhancing public awareness of Air Force-related cultural resources through continued collaboration with the Air Force Museum and Dayton Area Chamber of Commerce, is vital to preserving historical legacy, fostering patriotism and respect, educating future generations, and strengthening community ties to the installation.

Strategy CR-1A

Enhance the relationship with the Dayton Area Chamber of Commerce.

WPAFB can use its public affairs department to improve its partnership with the Dayton Area Chamber of Commerce and its members. By working together, they can engage the public more effectively in regional cultural initiatives and projects that impact the community. This could include programs focused on conservation, like protecting endangered species or preserving natural habitats and water quality, as well as safeguarding cultural resources. These joint efforts would help raise awareness about WPAFB's activities, allowing communities to be more prepared for and responsive to these events.

Responsible Party

- WPAFB

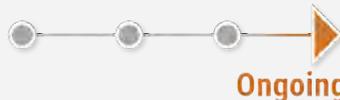
Partners

- Local and regional jurisdictions
- News and social media outlets

Strategy Type



Timeframe



Priority



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Strategy CR-1B

Enhance the relationship with the National Museum of the U.S. Air Force.

WPAFB can use its public affairs department to maintain and enhance its connection with the National Museum of the U.S. Air Force. This ongoing relationship should be used to ensure a smooth and current exchange of information from the base to the Museum for public dissemination. The Museum could serve as a direct channel for sharing information with visitors and locals that WPAFB wants the public to know. This could include updates on public engagement initiatives related to cultural and environmental compatibility issues should they arise.

Additional options that can occur through this public-facing partnership with the Museum include:

- Highlighting ongoing preservation efforts and projects by WPAFB to showcase the commitment to maintaining and protecting cultural resources for future generations.
- Hosting public lectures and a speaker series on Air Force history, inviting experts, veterans, and historians to share their insights and experiences.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy CR-1C **Commission public art and sculptures.**

The WPAFB Partnership Committee should identify and pursue, if feasible, public art and sculptures that can be placed throughout the region to promote the area and boost tourism.

Prior to pursuing this, establish a budget to determine the scope and range of projects. Consideration of public funding, such as a GoFundMe-type venture, should be explored for large-scale ventures. Local artists should be given first priority.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type **Timeframe** **Priority**

Additional Relevant Strategies **COM-5E Partner with media outlets.**

Media outlets are an excellent tool to promote special events, highlight significant cultural attractions, and maintain a constant awareness campaign that promotes the history of the region.

Resource Strategies

These strategies actively seek opportunities to reduce competition for shared resources, increase awareness of potential resource-related conflicts, and address issues related to the sustainability of biological and natural resources and infrastructure. For instance, changing climate patterns present a range of potential challenges. By collaboratively addressing these challenges, this project can positively impact community resiliency, protect natural resources, and ensure the sustainable use of shared assets like airspace and water.



Resiliency Issues and Strategies

Issue RES-1

Climate change is an evolving threat.

Adaptation strategies must continually evolve to effectively address the multifaceted challenges and threats posed by climate change, ensuring resiliency and sustainability in the face of environmental shifts.

**Strategy
RES-1A**

Monitor and collaborate to adapt to climate change in the region around WPAFB.

Effective implementation of climate change adaptation practices requires collaboration, cooperation, and engagement among multiple stakeholders, including government agencies, military authorities, local communities, businesses, academia, and nonprofit organizations. By fostering partnerships, sharing knowledge and resources, and coordinating efforts, a collective approach to climate resiliency can be achieved, maximizing the effectiveness of adaptation measures and promoting long-term sustainability.

Continuous monitoring, evaluation, and adaptation are also essential components of climate resiliency. Regular assessment of the effectiveness of adaptation measures, monitoring climate change trends and impacts, collecting data on resiliency indicators, and incorporating lessons learned into future planning and decision-making processes are critical for staying ahead of evolving climate challenges.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy RES-2A

Identify Opportunities for Shared Energy Resiliency.

To enhance energy resiliency for WPAFB and the surrounding communities, identifying opportunities for shared energy projects could provide a mutual and compatible benefit. This could include expanding renewable energy sources like solar and wind, deploying advanced energy storage systems such as batteries and microgrids, and modernizing power infrastructure.

Implementing smart grid technologies could optimize distribution and security, while demand response programs could balance load during peak periods between the base and communities. Partnering with local utility companies will ensure coordinated efforts and adequate resource sharing. Together, these initiatives could strengthen energy infrastructure, reduce vulnerabilities, and ensure a stable, resilient power supply for the base and the community.

Responsible Party

- WPAFB partner communities

Partners

- AES Ohio
- WPAFB
- Local and regional jurisdictions

Strategy Type



Timeframe



Priority





Biological Resources Issues and Strategies

Issue

There is potential for more preservation and protection of natural ecosystems.

BIO-1

Regional growth can increase pressure on natural habitats for development in proximity to WPAFB. These natural areas serve as effective encroachment buffers surrounding WPAFB and should continue to be a priority to support land use compatibility and resiliency.

**Strategy
BIO-1A**

Enact legislation to support conservation efforts.

Advocate for legislation and policies at the local, state, and federal levels that support the preservation of natural ecosystems and open spaces near military installations assessed based on current use.

State legislators can work toward enacting legislation that supports conservation efforts, such as the Sentinel Landscapes Partnership, through initiatives including conservation easement tax credits, property tax abatement for agriculture, and horticulture and forest lands.

The allocation of resources and funding for ongoing conservation efforts, restoration projects, and land acquisition to protect critical areas often has tangible additional benefits such as insulating and protecting communities from the adverse impacts of severe weather events.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

Strategy BIO-1B

Identify partners to protect natural ecosystems.

Identifying conservation partners to preserve working lands and natural ecosystems and promote habitat and species diversity supports the long-term sustainment of the region.

Creating legal agreements can protect the land from development in perpetuity. These agreements can include leveraging public-public and public-private (P4) partnerships and programs such as REPI.

Partnerships will allow WPAFB and partner communities to leverage the expertise and resources to preserve and protect the natural ecosystems.

Those partnership objectives can include:

- Conducting outreach and education programs to raise awareness among the local community about the importance of conserving natural ecosystems for military readiness and the environment;
- Creating and enhancing buffer zones or greenbelts around WPAFB that act as protective barriers to limit encroachment, with buffer zones serving as transitional spaces between developed areas and natural ecosystems;
- Fostering strong partnerships with local communities to collaboratively address the challenges of growth and development while preserving natural ecosystems;
- Hosting periodic meetings with local community leaders and residents to address concerns, share updates on base activities, and solicit feedback on ecosystem issues;
- Investing in habitat restoration and enhancement projects to improve the quality and resiliency of natural ecosystems; and
- Working with conservation organizations and government agencies to establish conservation easements on critical natural lands.

Responsible Party

- WPAFB partner communities

Partners

- Conservation agencies and organizations
- WPAFB
- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy BIO-1C **Participate in the Sentinel Landscapes Partnership.**

The Sentinel Landscapes Partnership is a group of federal agencies, state and local governments, and nongovernmental organizations that work together to provide private entities with sustainable land management practices around military installations and ranges. Together, they work with private entities to protect vital military test and training missions; conserve habitat and natural resources; and strengthen the economies of farms, ranches, and forests. The Partnership connects private landowners with voluntary assistance programs that support defense, conservation, and agricultural missions.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type


Timeframe

 Mid

Priority

 Medium

Strategy BIO-1D **Promote sustainable development.**

Communities can partner to encourage and incentivize sustainable development practices, such as green building standards, energy efficiency, and low-impact design, in areas surrounding the base.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type


Timeframe

 Short

Priority

 Medium

Strategy BIO-1E Develop a regional wildlife management plan.

BIO-1E

Communities can partner to create a wildlife management plan to identify ways to coexist with native species, promote biodiversity, and strengthen existing ecosystems. The plan can include addressing issues like wildlife hazards on the airfield and habitat protection.

The plan can establish development guidelines that limit construction near natural ecosystems and sensitive areas by identifying those that require thorough environmental impact assessments for development projects in areas of concern. This helps identify potential risks to natural habitats and inform decision-making.

Additionally, a monitoring and reporting schedule can be developed to track the status of natural habitats and ecosystems, ensuring early detection of threats and prompt response.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Mid

Priority



Medium

Strategy BIO-1F Enhance community restoration efforts.

BIO-1F

Communities and WPAFB can partner to provide cleanup, conservation, habitat restoration projects, and water protection and restoration efforts. Connected and involved communities are receptive to consensus building and seeking solutions to promote compatible development. Volunteering efforts are excellent ways for residents, elected officials, businesses, and military and civilian employees at WPAFB to work together to restore shared public/quasi-public spaces.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium



Land/Airspace Competition Issues and Strategies

Issue LAS-1

The growth of aviation at Dayton International Airport creates airspace competition.

A planned electric vertical takeoff and landing aircraft (air taxi) production facility at Dayton International Airport will increase air traffic in the region.

Strategy LAS-1A

Develop a Memorandum of Understanding.

WPAFB, the FAA, Dayton International Airport, and Joby International should develop an MOU to:

- Establish a formal open line of communication to ensure that flight activities associated with production testing do not interfere with existing or future airport operations;
- Create procedures to prevent testing from impeding military flight training;
- Ensure that all aviation operators (partners in the agreement), including air taxi services, adhere to federal and state aviation regulations and guidelines for airspace usage;
- Develop and maintain a safety and training program for air taxi operators to ensure that they are aware of and compliant with airspace regulations and best practices for sharing airspace; and
- Monitor airspace usage and propose adjustments as needed to address any conflicts, future airspace use increases, or issues that may arise.

Establish a communication protocol to protect the navigable airspace as airspace use may increase in the region.

Responsible Party

- WPAFB

Partners

- Federal Aviation Administration
- Joby International
- Dayton International Airport

Strategy Type



Timeframe



Short

Priority



Low

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Issue

Future proliferation of commercial drones can create airspace conflicts.

LAS-2

As drones transition from emerging technology to everyday commercial use, they can present airspace conflicts with military aircraft.

Strategy

Enhance awareness of federal UAS or drone regulations.

LAS-2A

Communities should work with WPAFB and the FAA to enhance awareness of federal regulations regarding the use and operation of UASs. Awareness enhancements should include but not be limited to:

- Access to information available from the FAA at public locations;
- Weblinks to jurisdictional websites, the FAA website, and National Conference of State Legislatures UAS websites, including the proposed regulation site (<http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx>); and
- Public meetings about drones and their impacts on military training and civilian/commercial aviation operations. The meetings should be tied with other public events that have already been planned and organized in partnership with community events that will boost awareness and education for existing and future drone regulations.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

Strategy LAS-2B Partner to enhance resources for enforcing FAA regulations.

The FAA Law Enforcement Assistance Program (LEAP) provides resources to enforce existing FAA regulations. The LEAP consists of special agents who are the point of contact for federal, state, local, tribal, territorial, and international law enforcement agencies. LEAP special agents can provide information on UAS enforcement and registration matters.

Responsible Party

- WPAFB Partnership Committee

Partners

- FAA

Strategy Type



Timeframe



Priority



Strategy LAS-2C Adopt UAS ordinances.

The WPAFB Partnership Committee and communities within the WPAFB imaginary surfaces (also known as HAFZ) should consider adopting UAS ordinances that dictate where and how UASs can be used. These ordinances should include procedures for landowners within a determined distance from WPAFB to notify the base when a UAS/drone is planning to use the airspace and alert WPAFB personnel, air traffic control, and security forces of activity near the base or flight patterns for safety and security reasons to avoid having the UAS/drone classified as a threat.

Responsible Party

- Project Area jurisdictions

Partners

- WPAFB
- FAA
- Other public agencies as needed

Strategy Type



Timeframe



Priority



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Strategy LAS-2D

Create a UAS operational procedures brochure.

The WPAFB Partnership Committee should develop an operational procedures brochure to advance awareness of drone regulations. The brochure can include:

- Common flight paths at WPAFB,
- Drone restriction areas,
- Educational information,
- Points of contact,
- Useful apps and websites, and
- Information on where to upload drone sightings.

The brochure should be placed in easily accessible and visible locations such as park centers, visitor areas, the Chamber of Commerce, and other entities/organizations that serve the public. The brochure should also be made publicly available as a downloadable PDF with hyperlinks to email contacts and access to relevant websites.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy LAS-2E

Promote UAS/drone use education through apps and websites.

The WPAFB Partnership Committee can enhance its websites to include a downloadable PDF of the UAS operational procedures brochure and helpful links to get recreational and professional UAS/drone users into successful flight situations.

Useful websites include the FAA's B4UFLY (also available as an app at <https://www.aloft.ai/download/>) and the Know Before You Fly website (knowbeforeyoufly.org), which was created in partnership with the FAA, the Academy of Model Aeronautics (AMA), and the Association for Unmanned Vehicle Systems International (AUVSI). The sites help educate prospective UAS users about safe and responsible operations and designated safe flying locations around airports.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy **Create a website to upload and document UAS sightings.**

LAS-2F

A dedicated, easily accessible web page or/and app to report and document sightings of illegal drone use promotes safe skies and contributes to protecting flight paths for general aviation and military aircraft.

As the proliferation of UAS use increases, illegal drone use should be reported, and having an accessible and up-to-date database of sightings supports authorized UAS users and a safe airspace.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
Medium

Additional Relevant Strategies **COM-1A Appoint or designate a community planning liaison officer.**

A community planner can support the education and awareness aspect by participating in events, coordinating with regional agencies, and staying up to date on UAS regulations.

COM-5E Partner with media outlets.

Media outlets are great resources to educate the public, especially drone operators, about the importance of respecting airspace restrictions and the potential safety risks associated with flying drones near military installations.



Water Quality/Quantity Issues and Strategies

Issue WQQ-1

The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.

Huffman Dam is one of five flood-control dams built in 1921 as part of the MCD response to the catastrophic Great Dayton Flood of 1913 to protect downstream communities from flooding.

Strategy WQQ-1A

Consult with flood protection and watershed experts.

The Miami Conservancy District should partner with WPAFB and WPCOG to hire qualified experts to analyze Huffman Dam and the Mad River watershed to propose strategies to reduce flood risk to WPAFB and the surrounding communities. It is possible that just rehabbing and preserving Huffman Dam will not result in the desired reduction of flood risk.

The existing conduits through the dams do not have the capability for staff to manually increase or decrease flow rates. This effort should study if major changes to the dam's outlet works are necessary to reduce flood risks. Many changes in the watershed upstream of Huffman Dam have occurred since 1922. This effort should analyze the watershed to determine if the volume of storage in the Huffman Storage Basin is adequate. This effort could lead to analyzing and studying the feasibility of additional flood control measures. Determine if the changes to CJ Brown Reservoir, changes to Huffman Dam, changes to all five dams, additional off-channel flood storage, or other solutions help reduce critical flood risks.

Responsible Party

- Miami Conservancy District

Partners

- WPCOG
- WPAFB
- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy WQQ-1B **Appoint or hire a dedicated grant writer(s).**

The Miami Conservancy District should partner with WPAFB and WPRCOG to identify and hire or contract professionals to focus on grant writing and fundraising efforts to assist in securing financial support for restoration and ongoing maintenance in collaboration with the MCD.

A broad portfolio should include the pursuit of government grants, private donations, and partnerships to secure the financial resources needed for restoration and maintenance.

Responsible Party

- WPRCOG

Partners

- Miami Conservancy District
- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



High

Strategy WQQ-1C **Consult with preservation organizations.**

The Miami Conservation District should collaborate with local and national preservation organizations to tap into their expertise, resources, and best practices to assist in identifying strategies to preserve, restore, and maintain Huffman Dam and the other four dams under the purview of MCD.

Responsible Party

- Miami Conservation District

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



High

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Strategy WQQ-1D Explore funding options.

Federal funding sources are likely available for needed dam improvements. These include programs such as the DoD's DCIP. A dedicated grant writer, or team, can support pursuing, writing, executing, and, if awarded, initial implementation of the grant.

Responsible Party

- WPCOG

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
High

Strategy WQQ-1E Pursue partnerships.

WPCOG can partner with private businesses or nonprofit organizations that may have an interest in supporting the preservation and improvement of Huffman Dam. These partnerships could bring additional revenue streams to improve infrastructure through donations, fundraisers, and overall awareness.

Responsible Party

- WPCOG

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
Low

Strategy Develop a preservation plan.

WQQ-1F

The MCD can develop a publicly available preservation plan that outlines the historical significance of the dams and the purpose of the MCD to include the District’s preservation priorities. This plan should guide the restoration efforts while respecting the dam’s heritage.

The plan development phase should include engagement with local government agencies, community organizations, and residents to gather input and support for the restoration and improvement of facilities within the MCD. Forming a task force or advisory committee to oversee the project should be considered.

The plan should establish a maintenance schedule and allocate resources for ongoing upkeep to ensure the dam remains in good condition in the future. The plan could be a more detailed breakdown of the MCD’s Capital Improvement Plan.

The plan will guide the restoration and rehabilitation of the dam infrastructure while preserving the historical and architectural significance of the District. All repairs and improvements should adhere to preservation standards and best practices.

The preservation plan, associated maintenance schedule, and Capital Improvement Plan aid in:

- Pursuing grants,
- Increasing advocacy for private donations, and
- Supporting partners’ abilities to demonstrate the objectives and tangible needs of fundraising efforts.

Responsible Party

- Miami Conservancy District

Partners

- WPAFB Partnership Committee
- Other public agencies as needed

Strategy Type



Timeframe



Mid

Priority



Medium

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Issue

Public concern exists over groundwater chemicals from WPAFB.

WQQ-2

Public concerns have emerged about the potential leaching of harmful chemicals from WPAFB into the surrounding groundwater. Some of these chemicals, possibly including PFAS, which was often used in firefighting foams, have been identified as being of particular concern due to their potential health impacts and environmental persistence.

Strategy

Prevent further groundwater contamination.

WQQ-2A

WPAFB should continue to implement prevention measures through its active restoration program that addresses PFAS compounds and other chemicals of concern in soils, surface water, and stormwater and groundwater contamination. This includes ensuring safe chemical storage and handling, implementing pollution prevention programs, maintaining groundwater monitoring programs to track contamination levels and verify the effectiveness of remediation efforts, and sharing the monitoring data with the public.

WPAFB should continue to actively engage with the EPA, Ohio Environmental Protection Agency (OEPA), and the City of Dayton in investigation and remediation activities.

Responsible Party

- WPAFB

Partners

- Environmental Protection Agency
- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy
WQQ-2B **Enhance communication protocols.**

WPAFB’s Public Affairs Office can enhance the base’s community-facing communication channels to keep the community apprised on WPAFB actions and federal guidance for the management and mitigation of the PFAS compounds. Examples include creating easily accessible web pages, providing up-to-date media releases, and organizing public meetings in which steps to mitigate PFAS compounds in the region are discussed.

The EPA is undertaking a review and will release a determination of the Comprehensive Environmental Response, Compensation, and Liability Act. The determination will likely influence the Air Force’s steps in the restoration and mitigation of hazardous chemicals.

Additionally, WPAFB should:

- Establish clear and open lines of communication with the public,
- Provide regular updates on groundwater testing, contamination levels, and remediation efforts, and
- Use multiple communication channels, including public meetings, websites, and social media.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- News and social media outlets

Strategy Type



Timeframe



Ongoing

Priority



High

Strategy WQQ-2C

Advocate for legislation to protect water sources.

Chemical manufacturing, storage, and transportation are important revenue and job producers across the nation. However, occurrences such as the train derailment in East Palestine, Ohio, remind residents of the adverse effects that can happen when hazardous chemicals are released into the environment. The State and the region should advocate for statewide legislation to protect the water resources in the State. Strong regulations, impact fees and fines, and corporate responsibility often lead to best practices.

Legislation should focus on policies that strengthen regulations regarding chemical storage, handling, and disposal, with a focus on preventing future contamination.

Responsible Party

- State House and Senate elected officials

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

Strategy
WQQ-2D

Enhance outreach efforts.

WPAFB can:

- Continue to engage with the local community at Restoration Advisory Board meetings to address their concerns and gather input on remediation plans, actively involving residents, local leaders, and environmental groups in the decision-making process;
- Continue to educate the public about the risks associated with groundwater contamination, the chemicals involved, and potential health effects;
- Continue its support of and participation in community health studies to investigate potential health impacts of groundwater contamination;
- Continue to share the results with the public and incorporate findings into remediation plans;
- Maintain collaboration with communities to develop resiliency plans that address potential long-term impacts of groundwater contamination and ensure preparedness for any future events;
- Continue to ensure strict compliance with federal, state, and local environmental regulations; and
- Remain collaborative with regulatory agencies to enforce cleanup requirements and transparent reporting.

Responsible Party

- WPAFB

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Development Strategies

These strategies actively tackle economic development and growth impacts, recognizing that communities and military installations tend to expand over time. The location and accessibility of transportation networks, recreational facilities, and economic centers play significant roles in how communities and installations interact. Given that land resources are limited, development often aims to rejuvenate existing areas or establish new commercial and residential zones. This section outlines strategies aimed at creating opportunities to limit encroachment on military operations while fostering stronger cooperation between the military and the community.



Anti-Terrorism/Force Protection Issues and Strategies

Issue

There is potential for drones to impact WPAFB.

AT-1

The advancement and accessibility of drones, or UAS technology, present a potential safety and security concern for WPAFB.

Strategy

Advocate for the creation of state legislation.

AT-1A

Research, development, and flight activities occur at various areas on the base. The use of drones to explore and navigate the base creates compatibility concerns. Legislation should include military installations as critical infrastructure and implement fines, fees, and prosecution in response to drone offenses.

The WPRCOG, along with state representatives, can advocate and advance legislation to protect military installations and operational areas from UAS surveillance.

Responsible Party

- State House and Senate elected officials

Partners

- WPRCOG
- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy AT-1B Establish, advertise, and enforce no-fly zones for recreational UAS users.

The communities around WPAFB enjoy a robust variety of outdoor recreational public spaces. These spaces include parks, rivers, dams, and historical areas. The Partnership Committee should collaborate to establish and disseminate information about these no-fly zones.

While no-fly zones exist around airports due to FAA guidelines, they may not be known to recreational users.

Public spaces should include signage to remind users that an area is a no-fly zone and drone use is prohibited there. Signage can include QR codes and sources where UAS operations are safe and do not interfere with military sites or aircraft flight paths.

Partners can conduct public awareness campaigns during social events to inform the local community about the risks of flying drones near the base and the legal consequences of doing so.

Responsible Party

- WPAFB Partnership Committee

Partners

- News and social media outlets
- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy AT-1C Implement best practices.

WPAFB should conduct a risk assessment of UAS use around the base. Concurrently, the base should collect and review information and best practices occurring throughout the nation at other military bases and agencies facing UAS-related incursions.

Once a risk assessment is complete and a threat level is assessed, relevant best practices, such as deterrence or detection, can then be adopted or applied at WPAFB if deemed necessary.

Responsible Party

- WPAFB

Partners

- USAF
- Other federal and public agencies as needed

Strategy Type



Timeframe



Priority



Strategy AT-1D

Establish a UAS working group.

Collaboration to ensure flight safety around WPAFB is a low-cost and efficient way to reduce hazards within the HAFZ. The working group, which can be a subset of the Partnership Committee, can:

- Continuously review and adapt airspace management regulations to keep pace with evolving drone technologies and changes in military airspace needs;
- Educate the public about the rules and penalties for non-compliance;
- Ensure strict adherence to federal and state regulations governing drone operation;
- Establish altitude restrictions for commercial drones to ensure they operate at safe altitudes, well below those used by military aircraft;
- Establish close coordination between civil aviation authorities, commercial drone operators, and military aviation authorities to ensure safe integration of commercial drones into shared airspace;
- Foster a positive relationship with the local community to encourage responsible UAS use and reporting of suspicious activity;
- Partner with local communities to share UAS awareness materials; and
- Promote the use of geofencing technology to establish no-fly zones around WPAFB and training areas to prevent drones from entering restricted airspace.

Responsible Party

- State House and Senate elected officials

Partners

- Other public agencies as needed

Strategy Types



Timeframe



Short

Priority



Medium

Strategy **Develop a UAS plan.**

AT-1E

WPAFB should create a comprehensive UAS action plan. The plan can include:

- A clear and comprehensive incident response plan for dealing with unauthorized drones. This portion should involve coordination with law enforcement, security personnel, and appropriate authorities;
- Strategies to deploy counter-drone technology to detect, track, and mitigate unauthorized drone activity. This may include systems for jamming, capturing, or redirecting rogue drones;
- Investment in advanced surveillance systems, such as radar and cameras, to monitor the airspace around the base. This can help in early detection of unauthorized drones;
- Investing in research and development to stay ahead of evolving drone technology and develop more effective counter-UAS solutions;
- Implementation of systems to identify drones in the vicinity, allowing for quick response and tracking of operators;
- Training security personnel to recognize and respond to unauthorized drone activity effectively;
- Use of geofencing technology to create virtual boundaries that prevent drones from entering sensitive areas without proper authorization; and
- Working closely with the FAA and other relevant authorities to develop and enforce regulations specific to the base’s needs.

Responsible Party

- WPAFB

Partners

- FAA
- WPAFB Partnership Committee
UAS/drone working group
- Other public agencies as needed

Strategy Type



Timeframe



Mid

Priority



Medium



Land Use Issues and Strategies

Issue

LU-1

There are inconsistencies in the noise regulations within the local zoning codes.

Regulations for noise-sensitive land uses within noise contours are in the Airport Zoning Regulations but not mirrored in local government zoning regulations. This can create inconsistencies in information and guidance conveyed to the public and development community by local government planning staff.

Strategy

LU-1A

Adopt the 2022 AICUZ Study noise contours.

The 2022 AICUZ Study promotes compatible uses around the base and assesses land use in the noise and safety zones.

Local jurisdictions should formally adopt and incorporate the noise zones into land use planning documents and supporting tools.

Responsible Party

- WPRCOG
- Clark, Greene, and Montgomery Counties

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

Strategy LU-1B **Adopt the aircraft noise land use compatibility guidelines.**

The DoD has updated its land use compatibility guidelines over the years. The current version has been simplified and adopted by all the Armed Forces.

Local jurisdictions can leverage these regulations to promote compatible development. The guidelines, with respect to aircraft noise, encourage residential development outside the 65 dB DNL noise zones [and] encourage residential permit requests inside the 65 dB DNL and greater noise zones and include documentation stating no viable alternative is available.

Responsible Party

- WPRCOG
- Clark, Greene, and Montgomery Counties

Partners

- Other public agencies as needed

Strategy Type 

Timeframe  Short

Priority  Medium

Strategy LU-1C **Create a future land use plan.**

The surrounding community partners should embark on a future land use plan. The plan should at a minimum identify and update existing land use, proposed future projects, and long-term growth objectives of the community.

The area should cover the HAFZ or the entirety of the imaginary surfaces. Additional areas of concern, in consultation with WPAFB, can be identified.

The plan can only cover areas that are agreed upon by each respective partner. Therefore, if a partner opts out, that community would not be part of the future land use plan.

The plan should incorporate existing regulations and identify areas of regional growth, shared opportunities, and economic centers in the region that are compatible with flight operations.

The plan, once adopted, should be incorporated into existing comprehensive plans and become a resource for future proposed developments and redevelopments to encourage a unified growth plan for the region and to ensure the long-term viability of WPAFB.

Responsible Party

- WPRCOG
- Clark, Greene, and Montgomery Counties

Partners

- WPAFB
- Other public agencies as needed

Strategy Type 

Timeframe  Mid

Priority  Medium

Strategy LU-1D

Establish a process checklist.

Adoption of aircraft noise guidelines can assist participating jurisdictions in establishing a clear process to allow for developments to be treated equitably during the review process. Possible steps to establish an inclusive process encompass the following:

- Create or update online platforms where zoning regulations are displayed, ensuring that both Airport Zoning Regulations and local government regulations are easily accessible and clearly consistent with each other.
- Conduct periodic reviews to ensure that local zoning regulations remain consistent with Airport Zoning Regulations, especially if there are changes or updates to the latter.
- Develop a process to track and ensure new subdivision plats include disclosures.
- Encourage the use of noise-reduction strategies in construction and renovation to minimize aircraft noise inside structures and residences.
- Enhance collaboration between WPAFB and local communities to ensure ongoing communication, particularly when regulatory changes or updates are being considered.
- Ensure harmonized noise-sensitive land use regulations are integrated into the development review and approval process.
- Establish a mechanism for developers and the public to provide feedback or seek clarification on regulations. This can help identify areas of confusion or potential inconsistency.
- Initiate an educational campaign to inform the public, developers, and other stakeholders about the updated regulations and the importance of adhering to noise-sensitive guidelines.
- Require property transactions within noise contours to include a disclosure about the noise-sensitive land use regulations to ensure that potential buyers or developers are aware of the regulations from the outset.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium



**Additional
Relevant
Strategies**

COM-3A Develop an aircraft noise fact sheet.

A fact sheet provides valuable information for developers and residents whose parcel exists within the 65 dB DNL and greater noise zones.

COM-5B Create a zoning regulations brochure.

The brochure includes sound-reduction strategies and best practices for planning and living within the noise environment.

COM-5C Locally adopt the Airport Zoning Regulations.

Formal adoption of the noise contours provides clear guidance to residents and developers on how to build within the WPAFB aircraft noise zones.

COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.

Jurisdictional adoption of the aircraft noise regulations should be uniform and applied fairly throughout each noise zone around WPAFB.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Issue

There is a lack of airfield safety zone regulations in local zoning codes.

LU-2

Regulations for compatible land uses within the CZ, APZ I, and APZ II are absent from local zoning regulations. Land uses are included in the Airport Zoning Regulations and are primarily focused on noise compatibility. The runway protection zone does not encompass the entirety of the safety zones.

Strategy

Formally adopt the safety zones compatibility guidelines in accordance with APZs.

LU-2A

Clark County's Comprehensive Plan identifies the southeastern portion of the County, where APZ I and APZ II exist, as low-density agriculture. The County can adopt the safety zones and respective compatibility guidelines.

They could also be adopted as part of a broader WPAFB character area, which could include the facilitation of easements to promote low-intensity agriculture use and open space in perpetuity.

In Greene County, APZ I and APZ II exist outside the borders of WPAFB. Land uses in these areas include mineral extraction and storage, along with conservation and recreation. Greene County can adopt the safety zone compatibility guidelines into its Land Use Plan.

Responsible Party

- Clark County
- Greene County

Partners

- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy LU-2B **Formally the safety zones compatibility guidelines.**

The southern safety zones are primarily on WPAFB property. The parts that are not on base are located within park space and roadways. While that tends to lead to compatible development, the jurisdictions should still adopt the land use compatibility guidelines to ensure that all uses, future uses, or transit uses (such as a citywide park event) do not conflict with the compatibility recommendations.

Responsible Party

- Montgomery County
- Dayton

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
Medium

Strategy LU-2C **Socialize the need for compatibility zones.**

In good planning situations, many informal actions occur. These actions promote compatible development. Consequently, this can also lead to confusion regarding the planning process and how to proceed with variance requests and can generally lead to incompatible development occurring due to perceived understandings that may not align properly with the compatibility guidelines.

WPAFB can socialize the need for a uniform approach to land use decisions with the various jurisdictions through discussions with planning staff, attending planning and zoning boards, and providing briefings on the benefits of compatibility planning around an active military base.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- Other public agencies as needed

Strategy Type 

Timeframe 
Ongoing

Priority 
Medium

Issue LU-3

The 1997 Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones and imaginary surfaces.

The 1997 Airport Zoning Regulations are over 25 years old and need to be updated using digital technology to ensure they correspond with current DoD land use guidance for development within airfield safety zones and imaginary surfaces. The maximum buildable heights within the Airport Zoning Regulations do not reflect the complete boundaries of current imaginary surfaces or the dynamic nature of how maximum buildable heights are calculated.

Strategy LU-3A

Update regulations to use the current compatibility guidelines.

Update the regulations to follow the current DoD land use compatibility guidelines for the noise zones in order to maintain compatibility within the zoning districts.

Outside the runway protection district, the main focus of the regulating districts is to promote sound-reduction strategies in building design to reduce the amount of aircraft sound heard within each structure. Various modifications and slight clarifications have occurred over the 20-plus years since the adoption of the 1997 regulations.

Responsible Party

- Clark, Greene, Miami, and Montgomery Counties

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy LU-3B	Update the Airport Zoning Regulations.
	<p>The Airport Zoning Regulations have been a great tool to promote compatible development around WPAFB. The zoning regulations were established in 1975, updated in 1997, and are due for an update in 2024.</p> <p>An update should include revisiting and revising (if necessary) the zones, permitted and prohibited land uses, and height restrictions, as well as incorporating updates to the compatibility guidelines.</p> <p>The local communities should adopt the updated planning zones within their respective land use plans and provide a visualization of these noise contours on online geospatial mapping tools.</p>
	<p>Responsible Party</p> <ul style="list-style-type: none"> ▪ Clark, Greene, Miami, and Montgomery Counties <p>Partners</p> <ul style="list-style-type: none"> ▪ WPRCOG ▪ Other public agencies as needed
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Strategy Types</p>  </div> <div style="text-align: center;"> <p>Timeframe</p>  <p>Mid</p> </div> <div style="text-align: center;"> <p>Priority</p>  <p>Medium</p> </div> </div>

Additional Relevant Strategies	COM-2A Develop formal coordination processes with regional planning staff.
	<p>Establish a formal review process between jurisdictions and WPAFB to provide feedback in a timely manner.</p>
	COM-2D Transfer the Airport Zoning Board into the WPCOG.
	<p>An entity that comprises all jurisdictions within the area of concern establishes synergies and enhances inclusivity.</p>
COM-5A Develop a public education campaign for Airport Zoning Regulations.	
<p>Inclusivity is a precursor to collaboration, and together, unified communities can promote compatible growth around WPAFB, boosting the regional economic output.</p>	
COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.	
<p>Adopting and owning the zoning regulations at the local level is more likely to occur if the Board is broadened to include all jurisdictions. This may also be instrumental in the adoption and implementation of the existing zoning regulations and future updates.</p>	

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Issue

There are not uniform height regulations in all jurisdictions around WPAFB.

LU-4

Height regulations in local zoning codes reference the FAA requirements or the Airport Zoning Regulations but lack transparency and clarity on how these requirements are administered.

Strategy

Develop a 3D GIS model.

LU-4A

Technological advances allow spatial modeling and project submittals to visually see the impact of structures and whether they impede the glide slopes or imaginary surfaces around airfields.

The GIS model should be based on heights and slopes of the imaginary surfaces. The model can accurately automate calculating maximum buildable heights on any given property to preserve the critical airspace surrounding WPAFB. This model could be used early in the development review process for evaluating development applications.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Mid

Priority



Strategy LU-4B Create height hazard calculator.

Establish a public-facing tool to show where height limitations exist. Creating a height hazard calculator could assist with informing the public and developers about how to determine maximum buildable heights before submitting a development proposal. This tool should be based on a 3D GIS model that makes it simple for the public to use.

The tool can be used to:

- Select parcel location,
- Identify imaginary surfaces,
- Understand maximum buildable height,
- Quickly determine restrictions, and
- Provide jurisdiction points of contact.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy LU-4C Create a crane mapping tool.

This can be in addition to or separate from LU-4B. This tool should be built to support construction efforts that require the use of a crane. Most companies are aware of contacting with the FAA around airports, but the procedure for coordinating with military air bases is more complex.

A web-based temporary crane mapping tool would display simple information about crane operations throughout the region. This tool would assist airfield managers in identifying obstructions and give airspace users a better idea of potential vertical hazards in the region.

Information collected should include construction timelines and the height of cranes during various phases.

Responsible Party

- WPAFB Partnership Committee

Partners

- FAA
- Other public agencies as needed

Strategy Type



Timeframe



Priority



WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Strategy LU-4D

Amend local codes.

Amending the local codes to incorporate requiring the use of the tools developed in strategies LU-4A, LU-4B, and LU-4C promote compatible growth in the region, streamline the review process, reduce unknown variables to development, and promotes compatible growth in the region.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Long

Priority



Medium

Strategy LU-4E

Enhance awareness of Part 77.

Enhancing awareness begins with increased public outreach. WPAFB, along with the Partnership Committee, can create awareness regarding the Code of Federal Regulations Title 14 Part 77, which establishes standards and notification requirements for objects affecting navigable airspace.

There should be an additional awareness campaign to educate the CUP Project Area constituents about FAA requirements, whom to contact at WPAFB, and additional communication and coordination partners dependent on the location of the development.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- Other public agencies as needed

Strategy Type



Timeframe



Ongoing

Priority



Medium



**Additional
Relevant
Strategies**

COM-1A Appoint or designate a Community Planning Liaison Officer.

An official position focused on compatibility planning and community engagement will provide continuity across jurisdictions.

COM-2D Transfer the Airport Zoning Board into the WPCOG.

Hosting the tool on one web page allows the regulations to be uniformly applied and reduces the cost of hosting a web portal and associated maintenance.

COM-5D Incorporate the Airport Zoning Regulations into plans and GIS portals.

Existing zoning regulations and future updates should be located on each County’s GIS portal to allow residents to gain quick access. Parcels can include fields with attributes to identify if they have height restrictions (and how high) as well as if they are within an identified noise or safety zone.

WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

Issue LU-5

Utility pole lines running along the northern portion of the airfield, and trees obstruct the imaginary surfaces.

Utility pole lines at the northern portion of the airfield present a danger to aircraft taking off and landing due to their height, which causes obstructions. Additionally, these lines pose further hazards through potential electromagnetic interference and visual distractions. Similarly, trees on private property obstruct the imaginary surfaces required for safe military operations. These obstructions interfere with flight paths and other critical operational areas, highlighting the incompatibility between certain civilian land uses and military needs outside the fence line.

Strategy LU-5A

Bury utility lines underground.

Engage with relevant stakeholders, including utility companies and aviation authorities, to explore options for relocating, burying, or mitigating the hazards posed by utility lines. Conduct a comprehensive risk assessment and feasibility study if necessary to evaluate the cost-effectiveness and safety implications of potential mitigation measures, ensuring informed decision-making and proactive risk management.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- Other public agencies as needed

Strategy Type



Timeframe



Priority



**Strategy
LU-5B**

Implement a comprehensive strategy to address tree obstructions near WPAFB’s imaginary surfaces.

This strategy should involve collaborating with property owners to trim or remove encroaching trees, conducting regular surveys to identify emerging obstructions, engaging in outreach with local authorities and aviation stakeholders to raise awareness, and enforcing zoning regulations and airspace protection measures. Additionally, establish a coordinated approach with communities and property owners for voluntary compliance, incentives, and education, while developing an airspace protection program for monitoring, reporting, and enforcement to prevent new obstructions and enhance flight safety. Strengthen collaboration between WPAFB, regulatory agencies, and aviation stakeholders for comprehensive and effective management of tree obstructions.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- Other public agencies as needed

Strategy Type



Timeframe



Mid

Priority



High



Noise Issues and Strategies

Issue NOI-1

There is incompatible development within the noise contours.

Noise-sensitive land uses, such as residential, educational, and childcare facilities, places of worship and public assembly, medical facilities, and long-term care facilities that are subject to low-level aircraft overflight can experience noise levels impacting quality of life.

Strategy NOI-1A

Establish a zoning overlay district.

The communities surrounding WPAFB should create zoning overlay districts that apply specific land use regulations within noise contours, even if the underlying zoning allows for different land uses. The overlay districts can be tailored to address noise concerns.

These overlay districts function similarly to the airport planning regulation districts as they are tailored to each jurisdiction.

The development of a map focused on the jurisdictional boundary that includes a noise overlay will quickly allow developers and residents who seek to build or renovate to visually identify if the parcel is within the overlay.

Responsible Party

- WPRCOG

Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

**Strategy
NOI-1B**

Require noise disclosure forms.

Residential and commercial properties should include on the bill of sale or rental contract a noise disclosure form identifying the location of the parcel and which noise zone impacts the development rights on the parcel. Public awareness can inform individuals about the noise conditions in the area.

The disclosure form should include the various noise zones and a place to identify which zone the parcel is located in. If the parcel is within two noise zones, the higher of the two noise zones (more restrictive) should prevail. Additional resources, such as common sound-reduction strategies, should be listed to allow for visualization of the existing structure to determine if the implementation of sound-reduction techniques has occurred.

It is important to note in the disclosure that sound cannot be mitigated outside structures and that existing structures which do not include sound-reduction techniques are more susceptible to disruptions and disturbances than buildings with noise-reduction insulation and features.

Responsible Party

- WPAFB partner communities

Partners

- Chamber of Commerce
- Realtor associations
- Other public agencies as needed

Strategy Types



Timeframe



Priority



**Strategy
NOI-1C**

Enforce regulations.

The existing noise regulations found within the Airport Zoning Regulations require construction techniques to reduce sound levels within structures. Requiring and monitoring the implementation of these strategies during initial construction and for all renovations supports residents and commercial enterprises.

A monitoring process (checklist) should be established to ensure that sound-reduction techniques are used. Additionally, a fact sheet of best practices should be available for each planning jurisdiction to provide an understanding of the strategies and potential costs associated with the development.

Additionally, the use of conditional use permits to allow development within noise contours under specific conditions and with noise mitigation measures in place should occur.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy NOI-1D

Create a best practices pamphlet with sound reduction strategies.

Create a sound-reduction strategy pamphlet that is available at all jurisdictional planning offices to generate a better understanding of living within the aircraft noise environment.

The pamphlet should include best practices, including techniques to reduce sound. This may include insulation, noise-resistant building materials, and soundproofing measures.

Responsible Party

- WPAFB partner communities

Partners

- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy NOI-1E

Implement a public education campaign.

Direct communication with residents within the operational noise footprint can assist with better relations between WPAFB and residents. Many community members are often unaware of how sound propagates throughout the year. Residents, businesses, and visitors often are unaware, startled, or disturbed by single events – such as an aircraft flyover.

This strategy can be implemented by having booths at public events that anticipate drawing large crowds, as well as by maintaining a health website with aircraft noise information.

Open and approachable dialogue should occur to:

- Allow discussion of land use within noise contours;
 - Encourage public input and involvement in decision-making processes, such as planning board meetings.

Responsible Party

- WPAFB

Partners

- WPAFB Partnership Committee
- Other public agencies as needed

Strategy Types



Timeframe



Priority



Strategy
NOI-1F

Create a noise awareness buffer.

Development of a noise awareness buffer around the noise contours (for example, a one-mile buffer) would provide an additional layer of protection and awareness for community members who live near WPAFB but outside the 65 dB DNL and greater noise contour.

It would also acknowledge that aircraft noise does not stop at the contour line but continues to propagate outward. This will assist community members who request additional information regarding why they experience aircraft noise when outside the noise contours.

Responsible Party

- WPRCOG

Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

Strategy Type


Timeframe

Short

Priority

Medium



Roadway Capacity Issues and Strategies

Issue RC-1

Traffic volume associated with WPAFB impacts the local transportation network at WPAFB Area A and Area B.

The level of WPAFB Area A and Area B traffic entering/exiting the base causes congestion affecting the adjacent residential neighborhoods.

Strategy RC-1A

Conduct a public outreach campaign.

Launch a public education campaign to inform residents and WPAFB employees about the issue, alternative routes, and the benefits of carpooling.

Involve residents of affected neighborhoods, WPAFB officials, planners from the City of Fairborn, and other stakeholders in discussions and decision-making processes that can lead to more comprehensive and accepted solutions, such as:

- Carpooling initiatives for base employees to reduce the number of vehicles during peak times;
- Dedicated turn lanes or other traffic devices, such as a traffic circle at the intersection of Kauffman Avenue and National Road, to improve traffic flow;
- Enhanced signage to guide vehicles toward less congested routes;
- If feasible, expansion of road capacity at entry points accomplished through widening roads, adding lanes, or improving intersections to accommodate increased traffic; and
- Multimodal transportation hubs that integrate different modes of transportation, such as buses, trains, and bicycles, at entry points to encourage the use of alternative transportation options.

Responsible Party

- WPAFB Partnership Committee

Partners

- WPAFB
- Other public agencies as needed

Strategy Type



Timeframe



Priority



Strategy RC-1B **Conduct a Traffic Impact Analysis study.**

Conduct a Traffic Impact Analysis (TIA) study to understand the primary causes, peak congestion times, and potential bottlenecks in the target area, providing data to support decision-making. The roadways to be evaluated should include Kauffman Avenue, National Road, Colonel Glenn Highway/Airway Road, and the I-675 exits to Gates 22B and 15A. The TIA should reflect that the largest backups are primarily due to operational constraints rather than just the local roads. Based on the TIA results, consider widening Kauffman Avenue if feasible and installing a changeable message sign on I-675 between US-35 and Gate 22B to alleviate congestion issues at Gate 22B. Additionally, as part of this strategy, the National Road (Grange Hall) and I-675 interchange should have enhanced traffic signal timing, improved lane configurations, and upgraded signage to ensure a smoother and safer commute for all users.

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Mid

Priority 
Medium

Strategy RC-1C **Seek federal funding.**

The communities can utilize the DCIP for part of the funding for the gates. The DCIP is designed to address deficiencies in community infrastructure supportive of a military installation in order to enhance quality of life for the military families, resiliency, or military value.

There may be other funding sources that could be utilized if the area transportation system meets certain criteria. Additional research on the issue should be completed.

Responsible Party

- WPRCOG

Partners

- Other public agencies as needed

Strategy Type 

Timeframe 
Mid

Priority 
Medium

Strategy RC-1D

Implement transportation demand management principles.

Consider implementing transportation demand management to assess, develop, and implement strategies and policies to reduce travel demand (specifically, single-occupancy private vehicles) or to redistribute trip generation (e.g., additional entry gates or staggered work hours/telecommuting).

Consider instituting programs that encourage telecommuting, flexible work hours, and ridesharing to reduce the number of vehicles on the road during peak times. Examples of transportation demand management strategies include:

- Charging for parking;
- Providing transit passes to students or workers;
- Promoting the use of public transportation, walking, and cycling by providing convenient facilities and encouraging local residents to reduce their reliance on personal vehicles;
- Engaging in outreach to employers to increase the use of telework and compressed work weeks;
- Organizing senior shuttles to healthcare facilities, and
- Organizing vanpools.

If this is implemented, setting a schedule for periodic reviews of traffic patterns and infrastructure will ensure that solutions continue to be effective and that adjustments are made as necessary.

Responsible Party

- WPRCOG

Partners

- Montgomery County
- Other public agencies as needed

Strategy Type



Timeframe



Ongoing

Priority



Medium



Safety

Issues and Strategies

Issue SA-1

There is incompatible development inside the APZs.

Incompatible land uses in APZ I and APZ II create potential concerns for public health, safety, and welfare in the event of an aircraft mishap.

Strategy SA-1A

Adopt land use compatibility guidelines.

Adopt the DoD land use guidance within APZ I and II.

Responsible Party

- Dayton and Fairborn

Partners

- WPAFB
- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

Strategy SA-1B

Use conditional-use permits.

Consider the use of conditional-use permits to allow development within APZs under specific conditions and with strict safety measures in place. Each case should be evaluated on its individual merits.

Responsible Party

- Clark County

Partners

- WPAFB
- Other public agencies as needed

Strategy Type



Timeframe



Short

Priority



Medium

Strategy SA-1C **Consider land easements.**

Perpetual easements can be seen as a transfer of development rights — such as “purchasing” the ability to build high-rise condos — or aviation rights.

Removing the potential for incompatible development through an easement requires willing partners and is often a benefit to the existing and future landowners.

The easement is purchased as a one-time fee, providing a cash infusion to the seller. The long-term benefit beyond the existing owner is the reduction of property taxes due to the limited development potential.

Strategy Types



Timeframe



Mid

Priority



Medium

Responsible Party

- WPAFB Partnership Committee

Partners

- Other public agencies as needed

Strategy SA-1D **Enter into development agreements.**

Consider the use of development agreements between counties and developers. Utilize development agreements to help developers and counties consider impacts on military missions from growth in unincorporated areas.

Instituting development agreements for areas of concern should provide an additional layer of protection to promote compatible growth around the base.

The agreement must be agreed upon as a voluntary contract between a local jurisdiction and a person who owns or controls property within the jurisdiction, detailing the obligations of both parties and specifying the standards and conditions that will govern development of the property.

Strategy Type



Timeframe



Short

Priority



Medium

Responsible Party

- WPRCOG

Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

Strategy SA-1E **Create a buffer around the safety zones.**

Encroachment often moves all the way to the fence line. It is important to note that an aircraft mishap, if a crash was to occur, is most likely to occur within the safety zones. However, various conditions could cause the actual path of a crash to shift farther out or to either side depending upon conditions.

Creating a land development buffer beyond the safety zones is advised. The buffer should promote low-density uses and activities compatible with air operations.

Responsible Party

- WPRCOG

Partners

- Clark, Greene, Miami, and Montgomery Counties
- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
Medium

Issue SA-2 **Bird and wildlife attractants exist near the runways.**

While conservation areas surrounding WPAFB reduce the potential for development encroachment, they are also habitats for birds and wildlife that can create hazards for aircraft strikes (Bird/Wildlife Aircraft Strike Hazards).

Strategy SA-2A **Develop and distribute BASH educational materials.**

These materials should provide educational information to local jurisdictions and agencies in the region relative to reducing the potential for bird and wildlife attractants that may impede safe aircraft operations. Include educational materials on WPAFB and jurisdiction websites.

Responsible Party

- WPAFB Partnership Committee

Partners

- WPAFB
- Other public agencies as needed

Strategy Type 

Timeframe 
Short

Priority 
Medium

Strategy SA-2A

Implement BASH prevention techniques.

BASH prevention techniques include but are not limited to:

- Collaborating with aviation authorities to establish and enforce safety protocols for developments near airports, including bird strike prevention, lighting requirements, and emergency response coordination;
- Conducting regular safety audits and risk assessments to evaluate the effectiveness of safety measures and identify opportunities for improvement;
- Conducting wildlife hazard assessments to identify high-risk areas and potential attractants and using the findings to develop targeted mitigation strategies;
- Continuing the implementation of the BASH program on base;
- Developing wildlife management plans in areas prone to wildlife hazards, such as bird strikes near airports. Mitigation strategies may include habitat management or deterrent methods;
- Installing fencing and physical barriers to keep wildlife away from the runway area. These barriers can help prevent access to runways and taxiways;
- Managing vegetation along runways to reduce the presence of small mammals, which can attract predatory birds. This includes mowing, trimming, and vegetation control; and
- Using bird and wildlife deterrents, such as scare devices, pyrotechnics, and acoustic repellent systems, to discourage birds and wildlife from congregating near runways.

Responsible Party

- WPAFB Partnership Committee

Partners

- WPAFB
- Other public agencies as needed

Strategy Types



Timeframe



Priority





Dust/Smoke/Steam Issues and Strategies

Issue
DSS-1

Dust/Smoke/Steam could limit operational capabilities at WPAFB.

Dust, smoke, and steam have the potential to reduce visibility, impair aircraft systems, and create hazardous conditions for flight operations at WPAFB.

Strategy
DSS-1A

Develop and implement a strategy to deal with high amounts of dust in the air.

Develop and implement a comprehensive strategy that includes real-time environmental monitoring systems with early warning alerts, possibly upgrade ventilation with HEPA filters, and enact strict maintenance and cleaning protocols, tailored training programs, emergency response plans, collaboration with environmental agencies, and continuous feedback mechanisms. This approach will mitigate hazards from dust, smoke, and steam, ensuring safer flight operations at WPAFB.

Furthermore, communication with communities surrounding WPAFB that may present higher amount of dust particles from industry or dirt road infrastructure may mitigate challenges associated with this issue.

Responsible Party

- WPRCOG

Partners

- Clark, Greene, Miami, and Montgomery Counties, and Miami Conservancy District
- Other public agencies as needed

Strategy Type



Timeframe



Priority





WRIGHT-PATTERSON AFB COMPATIBILITY USE PLAN

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**WRIGHT-PATTERSON
COUNCIL OF GOVERNMENTS**

 **Matrix**



CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

ACCEPTING THE WRIGHT-PATTERSON AIR FORCE BASE COMPATIBILITY USE PLAN (CUP) IN GOOD FAITH AND ENDORSING THE IMPLEMENTATION STRATEGIES AS IDENTIFIED IN THE PLAN.

WHEREAS, the Wright-Patterson Air Force Base (AFB) Compatibility Use Plan (CUP) is an update to the 1996 Wright-Patterson AFB Joint Land Use Study (JLUS) and the result of a collaborative planning effort by the Wright-Patterson AFB Regional Council Of Governments and the Dayton Development Coalition, in collaboration with counties, townships, and municipalities; Wright-Patterson AFB; regional, state, and federal agencies; and other interested and affected stakeholders; and

WHEREAS, the CUP was sponsored by the U.S. Department of Defense Office of Local Defense Community Cooperation with the primary goal of studying land use compatibility and developing strategies designed to safeguard the quality of life of community residents, the growth and economic development of the communities, and missions of Wright-Patterson AFB; and

WHEREAS, the CUP contains recommendations for the implementation of strategies, policies, and actions intended to promote collaborative and compatible land use planning, minimize the impact of military operations on nearby communities, increase public awareness of military operations and other activities at Wright-Patterson AFB, and to prevent incompatible land uses and other community impacts to the Wright-Patterson AFB missions; and

WHEREAS, the CUP Steering Committee guided and oversaw the CUP process and development of the CUP, met to review and provide input on the CUP, and supported public meetings, providing an opportunity for the public to participate in the process and provide comments on the draft CUP; and

WHEREAS, the CUP Steering Committee reviewed and accepted the final CUP on November 19, 2024.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The Wright-Patterson AFB Compatibility Use Plan (CUP) is accepted in good faith and the Huber Heights City Council endorses and supports the strategies described therein that are intended to encourage compatible land use development around Wright-Patterson AFB, ensure the continued community benefits from Wright-Patterson AFB, and sustain the long-term viability of Wright-Patterson AFB missions.

Section 2. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 3. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

Wright-Patterson AFB Compatibility Use Plan (CUP)

February 4, 2025

Prepared for Wright-Patterson Regional Council of Governments
Funded by the Office of Local Defense Community Cooperation (OLDCC),
Department of Defense

Membership

- **City of Huber Heights**
- **City of Beavercreek**
- **City of Dayton**
- **City of Fairborn**
- **City of Riverside**
- **Bath Township**
- **Associate Membership**
 - **WPAFB 88th ABW/SI**
 - **Dayton Development Coalition**
 - **Miami Conservancy District**
 - **Miami Valley Regional Planning Commission**
 - **Wright State University**
 - **Greene County**
 - **Montgomery County**

Wright-Patterson AFB Compatibility Use Plan (CUP)

Purpose of the CUP

- **Protect Military Operations – Minimize encroachments and ensure mission sustainability**
- **Support Regional Growth – Guide land use planning and economic development**
- **Enhance Collaboration – Strengthen partnerships between WPAFB, local governments, and stakeholders**
- **Improve Safety & Quality of Life – Address noise, infrastructure, and environmental concerns**

Wright-Patterson AFB Compatibility Use Plan (CUP)

Key Compatibility Focus Areas

- **Land Use Compatibility – Prevent incompatible development near WPAFB**
- **Transportation & Infrastructure – Improve roadways, utilities, and emergency response**
- **Environmental & Safety Considerations – Mitigate noise, airspace, and accident potential risks**
- **Economic Development – Leverage WPAFB's economic impact for regional growth**
- **Community Engagement – Ongoing**

Wright-Patterson AFB Compatibility Use Plan (CUP)

Plan	Issue #	Issue Description	Strategy#	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1A	Identify a point of contact and create a pamphlet with WPAFB positions and contact information that agencies, developers, jurisdictions, organizations, residents, and WSU can utilize to contact WPAFB.	WPAFB	WPAFB Tenant Units	Short	High	7-06
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1C	Develop and maintain mutual aid agreements.	WPAFB Partnership Committee	WPCOG, Other as needed	Mid	High	7-08
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1D	Enhance public engagement activities.	WPAFB	WPAFB Partnership Committee, WPAFB PAO, Other as needed	Short	High	7-09
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2D	Establish a WPCOG technical subcommittee to the Airport Zoning Board.	WPCOG	Other as needed	Short	High	7-14
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4A	Establish a CUP Implementation Phase Committee.	WPCOG	WPAFB, Clark County, Green County, Montgomery County, Miami County, Dayton Development Coalition, Miami Conservancy District, and Others as needed	Short	High	7-18
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4B	Develop a charter.	WPCOG	WPAFB, Clark County, Green County, Montgomery County, Miami County, Dayton Development Coalition, Miami Conservancy District, and Others as needed	Short	High	7-19
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4C	Identify funding for implementing the CUP strategies.	WPAFB Implementation Phase Committee	Other as needed	Short	High	7-20
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4D	Develop and fortify WPCOG revenue streams.	WPCOG	Other as needed	Short	High	7-21
Communication and Coordination	COM-4	There will need to be an effective collaboration plan to implement the recommendations.	COM-4E	Create a sharing portal.	WPAFB Partnership Committee	Other as needed	Short	High	7-22
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5B	Create an Airport Zoning Regulations brochure.	WPCOG	Other as needed	Short	High	7-24
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5C	Locally adopt the Airport Zoning Regulations.	Local jurisdictions	Other as needed	Short	High	7-24
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5D	Incorporate the Airport Zoning Regulations into plans and GIS portals.	WPCOG	Other as needed	Short	High	7-25
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5E	Update the existing WPAFB Airport Zoning Regulations.	WPCOG	Other as needed	Short	High	7-25
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2C	Adopt UAS ordinances.	Project Area jurisdictions	WPAFB, FAA, Other as needed	Short	High	7-42
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2D	Create a UAS operational procedures brochure.	WPAFB Partnership Committee	Other as needed	Short	High	7-43
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1A	Consult with flood protection and watershed experts	Miami Conservancy District	WPCOG, WPAFB, Other as needed	Short	High	7-45
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1B	Appoint or hire a dedicated grant writer(s).	WPCOG	Miami Conservancy District, Other as needed	Short	High	7-46
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1C	Consult with preservation organizations.	Miami Conservancy District	Other as needed	Short	High	7-46
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1D	Explore funding options.	WPCOG	Other as needed	Short	High	7-47
Water Quality/Quantity	WQQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQQ-2A	Prevent further groundwater contamination.	WPAFB	Environmental Protection Agency, Other as needed	Ongoing	High	7-49
Water Quality/Quantity	WQQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQQ-2B	Enhance communication protocols.	WPAFB	WPAFB Partnership Committee, News and social media outlets	Ongoing	High	7-50
Water Quality/Quantity	WQQ-2	Public concern exists over groundwater chemicals from WPAFB.	WQQ-2D	Enhance outreach efforts.	WPAFB	Other as needed	Ongoing	High	7-52

Plan	Issue#	Issue Description	Strategy#	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Land Use	LU-5	Utility pole lines run along the northern portion of the airfield, and trees obstruct the imaginary surfaces	LU-5A	Bury utility lines underground.	WPAFB	WPAFB Partnership Committee, Other as needed	Mid	High	7-69
Land Use	LU-5	Utility pole lines run along the northern portion of the airfield, and trees obstruct the imaginary surfaces	LU-5B	Implement a comprehensive strategy to address tree obstructions near WPAFB's imaginary surfaces.	WPAFB	WPAFB Partnership Committee, Other as needed	Mid	High	7-70
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1D	Create a best practice pamphlet with sound reduction strategies.	WPAFB partner communities	Other as needed	Short	High	7-73
Cultural Resources	CR-1	There is a potential for enhanced public awareness of Air Force-related cultural resources.	CR-1A	Enhance the relationship with the Dayton Area Chamber of Commerce.	WPAFB	Local jurisdictions, regional jurisdictions, News and social media outlets	Ongoing	Low	7-31
Cultural Resources	CR-1	There is a potential for enhanced public awareness of Air Force-related cultural resources.	CR-1B	Enhance the relationship with the National Museum of the U.S. Air Force	WPAFB Partnership Committee	Other as needed	Ongoing	Low	7-32
Cultural Resources	CR-1	There is a potential for enhanced public awareness of Air Force-related cultural resources.	CR-1C	Commission public art and sculptures.	WPAFB Partnership Committee	Other as needed	Mid	Low	7-33
Land/Airspace Competition	LAS-1	The growth of aviation at Dayton International Airport creates airspace competition.	LAS-1A	Develop a Memorandum of Understanding.	WPAFB	Federal Aviation Administration, Joby International, Dayton International Airport	Short	Low	7-40
Water Quality/Quantity	WQQ-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQQ-1E	Pursue partnerships.	WPCOG	Other as needed	Short	Low	7-47
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1B	Establish/transition to the WPAFB Partnership Committee.	WPCOG	WPAFB, Clark County, Green County, Montgomery County, Miami County, Dayton Development Coalition, Miami Conservancy District, and Others as needed	Mid	Medium	7-07
Communication and Coordination	COM-1	External coordination with WPAFB tenants is inconsistent	COM-1E	Establish a recurring agenda item for compatibility at WPCOG meetings.	WPCOG	WPAFB, Other as needed	Short	Medium	7-10
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2A	Develop a courtesy review process with regional planning staff.	WPAFB	Local jurisdictional planning staff	Short	Medium	7-11
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2B	Collaborate and enhance awareness of compatible land use planning	WPAFB	WPAFB Airport Zoning Board, WPCOG	Short	Medium	7-12
Communication and Coordination	COM-2	No standardized development review process exists.	COM-2C	Develop a notification regional web portal	WPCOG	WPAFB Airport Zoning Board	Short	Medium	7-13
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3A	Develop an aircraft noise fact sheet.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-15
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3B	Establish a dedicated web page for aircraft noise	WPAFB Partnership Committee	Other as needed	Short	Medium	7-16
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3C	Develop a PFAS fact sheet.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-17
Communication and Coordination	COM-3	WPAFB outreach with the public is viewed as limited.	COM-3C	Create a public advisory board for the WPAFB CUP.	WPAFB Partnership Committee	Local citizens	Short	Medium	7-17
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5A	Develop a public education campaign for Airport Zoning Regulations.	WPCOG	Other as needed	Short	Medium	7-23
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5F	Partner with media outlets.	WPCOG	Other as needed	Short	Medium	7-26
Communication and Coordination	COM-5	Needs for increased public awareness of the WPAFB Airport Zoning Regulations.	COM-5G	Enhance community engagement procedures.	WPCOG	Other as needed	Short	Medium	7-27
Communication and Coordination	COM-6	There is a lack of inclusivity on the WPAFB Airport Zoning Board.	COM-6A	Expand Board membership to include townships, cities, and villages.	WPAFB Airport Zoning Board	Other as needed	Short	Medium	7-28
Communication and Coordination	COM-6	There is a lack of inclusivity on the WPAFB Airport Zoning Board.	COM-6B	Formalize the review process.	WPAFB Airport Zoning Board	Other as needed	Short	Medium	7-29
Resiliency	RES-1	Climate change is an evolving threat.	RES-1A	Monitor and collaborate to adapt to climate change in the region around WPAFB.	WPAFB partner communities	Other as needed	Short	Medium	7-34

Plan	Issue #	Issue Description	Strategy #	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Resiliency	RES-1	Climate change is an evolving threat.	RES-2A	Identify Opportunities for Shared Energy Resiliency	WPAFB partner communities	AES Ohio, WPAFB, Local jurisdictions, regional jurisdictions	Long	Medium	7-35
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1A	Enact legislation to support conservation efforts.	WPAFB partner communities	Other as needed	Short	Medium	7-36
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1B	Identify partners to protect natural ecosystems.	WPAFB partner communities	Conservation agencies, WPAFB, Other as needed	Short	Medium	7-37
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1C	Participate in the Sentinel Landscapes Partnership.	WPAFB partner communities	Other as needed	Mid	Medium	7-38
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1D	Promote sustainable development.	WPAFB partner communities	Other as needed	Short	Medium	7-38
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1E	Develop a regional wildlife management plan.	WPAFB partner communities	Other as needed	Mid	Medium	7-39
Biological Resources	BIO-1	There is potential for more preservation and protection of natural ecosystems.	BIO-1F	Enhance community restoration efforts.	WPAFB partner communities	Other as needed	Short	Medium	7-39
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2A	Enhance awareness of federal UAS or drone regulations.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-41
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2B	Partner to enhance resources for enforcing FAA regulations.	WPAFB Partnership Committee	FAA	Mid	Medium	7-42
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2E	Promote UAS/drone use education through apps and websites	WPAFB Partnership Committee	Other as needed	Short	Medium	7-43
Land/Airspace Competition	LAS-2	The future proliferation of commercial drones can create airspace conflicts.	LAS-2F	Create a website to upload and document UAS sightings.	WPAFB Partnership Committee	Other as needed	Short	Medium	7-44
Water Quality/Quantity	WQO-1	The antiquated condition of Huffman Dam creates a potential water quality and safety hazard.	WQO-1F	Develop a preservation plan.	Miami Conservancy District	WPAFB Partnership Committee, Other as needed	Mid	Medium	7-48
Water Quality/Quantity	WQO-2	Public concern exists over groundwater chemicals from WPAFB.	WQO-2C	Advocate for legislation to protect water sources.	State House and Senate elected officials	Other as needed	Short	Medium	7-51
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1A	Advocate for the creation of state legislation.	State House and Senate elected officials	WPCOG, Other as needed	Short	Medium	7-53
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1B	Establish, advertise, and enforce no-fly zones for recreational UAS users.	WPAFB Partnership Committee	News and social media outlets, Other as needed	Short	Medium	7-54
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1C	Implement best practices.	WPAFB	USAF, Other federal and public agencies as needed	Short	Medium	7-54
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1D	Establish a UAS working group.	State House and Senate elected officials	Other as needed	Short	Medium	7-55
Anti-Terrorism/Force Protection	AT-1	There is potential for drones to impact WPAFB	AT-1E	Develop a UAS plan.	WPAFB	FAA, WPAFB Partnership Committee UAS/drone working group, Other as needed	Mid	Medium	7-56
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1A	Adopt the 2022 AICUZ Study noise contours.	WPCOG, Clark, Greene, Montgomery Counties	Other as needed	Short	Medium	7-57
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1B	Adopt the aircraft noise land use compatibility guidelines.	WPCOG, Clark, Greene, Montgomery Counties	Other as needed	Short	Medium	7-58
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1C	Create a future land use plan.	WPCOG, Clark, Greene, Montgomery Counties	Other as needed	Mid	Medium	7-58
Land Use	LU-1	There are inconsistencies in the noise regulations within the local zoning codes	LU-1D	Establish a process checklist.	WPAFB partner communities	Other as needed	Short	Medium	7-59
Land Use	LU-2	There is a lack of airfield safety zone regulations in local zoning codes.	LU-2A	Formally adopt the safety zone compatibility guidelines per APZs.	Clark County, Greene County	Other as needed	Short	Medium	7-61
Land Use	LU-2	There is a lack of airfield safety zone regulations in local zoning codes.	LU-2B	Formally adopt the safety zone compatibility guidelines.	Montgomery County, Dayton	Other as needed	Short	Medium	7-62
Land Use	LU-2	There is a lack of airfield safety zone regulations in local zoning codes.	LU-2C	Socialize the need for compatibility zones.	WPAFB	WPAFB Partnership Committee, Other as needed	Ongoing	Medium	7-62

Plan	Issue #	Issue Description	Strategy #	Strategy Description	Responsible Party	Partners	Timeframe	Priority	Page
Land Use	LU-3	The 1997 Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones and imaginary surfaces.	LU-3A	Update regulations to use the current compatibility guidelines.	Clark County, Greene County, Miami County, Montgomery County	Other as needed	Short	Medium	7-63
Land Use	LU-3	The 1997 Airport Zoning Regulations do not reflect the latest DoD compatible land use guidance for airfield safety zones and imaginary surfaces.	LU-3B	Update the Airport Zoning Regulations.		WPCOG, Other as needed	Mid	Medium	7-64
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4A	Develop a 3D GIS model.	WPAFB Partnership Committee	Other as needed	Mid	Medium	7-65
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4B	Create a height hazard calculator.		Other as needed	Mid	Medium	7-66
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4C	Create a crane mapping tool.		FAA, Other as needed	Mid	Medium	7-66
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4D	Amend local codes.		Other as needed	Long	Medium	7-67
Land Use	LU-4	There are not uniform height regulations in all jurisdictions around WPAFB.	LU-4E	Enhance awareness of Part 77.	WPAFB	WPAFB Partnership Committee, Other as needed	Ongoing	Medium	7-67
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1A	Establish a zoning overlay district.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-71
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1B	Require noise disclosure forms.	WPAFB partner communities	Chamber of Commerce, Realtor associations, Other as needed	Ongoing	Medium	7-72
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1C	Enforce regulations.	WPAFB partner communities	Other as needed	Ongoing	Medium	7-72
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1E	Implement a public education campaign.	WPAFB	WPAFB Partnership Committee, Other as needed	Ongoing	Medium	7-73
Noise	NOI-1	There is incompatible development within the noise contours.	NOI-1F	Create a noise awareness buffer.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-74
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1A	Conduct a public outreach campaign.	WPAFB Partnership Committee	WPAFB, Other as needed	Short	Medium	7-75
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1B	Conduct a Traffic Impact Analysis study.	WPAFB Partnership Committee	Other as needed	Mid	Medium	7-76
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1C	Seek federal funding.	WPCOG	Other as needed	Mid	Medium	7-76
Roadway Capacity	RC-1	Traffic volume associated with WPAFB impacts the local street network surrounding WPAFB.	RC-1D	Implement transportation demand management principles.	WPCOG	Montgomery County, Other as needed	Ongoing	Medium	7-77
Safety	SA-1	There is incompatible development inside the APZs.	SA-1A	Adopt land use compatibility guidelines.	Dayton, Fairborn	WPAFB, Other as needed	Short	Medium	7-78
Safety	SA-1	There is incompatible development inside the APZs.	SA-1B	Use conditional-use permits.	Clark County	WPAFB, Other as needed	Short	Medium	7-78
Safety	SA-1	There is incompatible development inside the APZs.	SA-1C	Consider land easements.	WPAFB Partnership Committee	Other as needed	Mid	Medium	7-79
Safety	SA-1	There is incompatible development inside the APZs.	SA-1D	Enter into development agreements	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-79
Safety	SA-1	There is incompatible development inside the APZs.	SA-1E	Create a buffer around the safety zones.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Other as needed	Short	Medium	7-80
Safety	SA-2	Bird and wildlife attractants exist near runway.	SA-2A	Develop and distribute BASH educational materials.	WPAFB Partnership Committee	WPAFB, Other as needed	Short	Medium	7-80
Safety	SA-2	Bird and wildlife attractants exist near runway.	SA-2B	Implement BASH prevention techniques.	WPAFB Partnership Committee	WPAFB, Other as needed	Ongoing	Medium	7-81
Dust/Smoke/Steam	DSS-1	Dust/Smoke/Steam could limit operational capabilities at WPAFB.	DSS-1A	Develop and implement a strategy to deal with high amounts of dust in the air.	WPCOG	Clark County, Greene County, Miami County, Montgomery County, Miami Conservancy District, Other as needed	Short	Medium	7-82

Questions?

AI-10673

Topics Of Discussion M.

Council Work Session

Meeting Date: 03/04/2025

Montgomery County Hazard Mitigation Plan

Submitted By: Rachael Dillahunt

Department: City Manager

Council Committee Review?: Council Work Session

Division: City Manager

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Montgomery County Hazard Mitigation Plan

Purpose and Background

There currently exists between the City of Huber Heights, Ohio and the Board of Commissioners of Montgomery County, Ohio, an agreement that Montgomery County, through its Office of Emergency Management, shall provide emergency management assistance to the City in conjunction with a countywide coordinated program. This agreement requires the City to approved the 2024 Montgomery County Hazard Mitigation Plan.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

Letter

2024 Montgomery County Hazard Mitigation Plan

Resolution



November 12, 2024
EMC-2022-BR-020-0012

Ms. Nedra Havens, Interim Director
Montgomery County Office of Emergency Management
451 W. Third Street
Dayton, Ohio 45422

RE: Updated Montgomery County 2024 Multi-Hazard Mitigation Plan

Dear Ms. Havens,

Thank you for submitting the Montgomery County 2024 Multi-Hazard Mitigation Plan for our review. As authorized by the FEMA-State Program Administration by States Agreement, reiterated under FEMA-4447-DR-OH, the Ohio Emergency Management Agency has reviewed the Montgomery County plan and found that it has met the required criteria contained in 44 CFR Part 201.6.

The plan is now approved pending adoption. The next step is for the county and its participating jurisdictions to formally adopt this plan by passing and signing a resolution or ordinance as appropriate. Once the plan has been adopted, please forward copies of the adoption documents to our office. The Mitigation Branch will forward these documents to FEMA Region V. Communities that do not adopt the plan will not be eligible for Federal mitigation funding. After review of the adoption documents, FEMA will issue a letter granting final approval of the plan.

Please note that participating jurisdictions that adopt the plan more than one year after the date of this letter must either:

- Validate that their information in the plan remains current with respect to both the risk assessment (no recent hazard events, no changes in development) and their mitigation strategy (no changes necessary); or
- Make the necessary updates before submitting the adoption resolution to FEMA.

Should you have any questions please contact Luan Nguyen at 614/799-3531, or by email at lknguyen@dps.ohio.gov.

Sincerely,

Steven A. Ferryman, CFM
State Hazard Mitigation Officer
Mitigation Branch Chief

Attachments: State-Evaluated Local Mitigation Plan Review Tool dated November 12, 2024

Cc: Phil Clayton, Regional Supervisor, Ohio EMA
Sam Reed, Emergency Management Specialist, Ohio EMA
File

SAF/ln

Sima S. Merick, Executive Director
2855 West Dublin-Granville Road
Columbus, Ohio 43235-2712 U.S.A.



(Source: Dayton Daily News)

2024 MONTGOMERY COUNTY NATURAL HAZARD MITIGATION PLAN

PREPARED BY:
Burton Planning Services
252 Electric Avenue
Westerville, Ohio 43081



PREPARED FOR:
Montgomery County
760 Vantage Point
Miamisburg, Ohio 45324



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1 | Introduction

1.1 Overview

With the 2019 Montgomery County Natural Hazard Mitigation Plan set to expire in August 2024, Montgomery County and its constituents are aiming to adopt a new, updated natural hazard mitigation plan. As outlined in the Disaster Mitigation Act of 2000 (DMA2K), any local jurisdiction seeking funding from the Federal Emergency Management Agency (FEMA) must maintain an up-to-date disaster mitigation plan. This Plan meets the criteria as set forth by FEMA in the DMA2K and provides the County and its participating jurisdictions with a comprehensive guide for future mitigation efforts to combat the hazards that affect their communities.

Natural, geological, and human-caused hazards pose a variety of risks to the lives, businesses, and properties within Montgomery County. As such, a Core Planning Committee within Montgomery County has been established with the goal of developing and implementing the 2024 Montgomery County Natural Hazard Mitigation Plan. Through cooperative efforts between local, county, state, and federal government agencies, this Plan is designed to minimize the adverse effects of hazardous events on the lives and properties of residents of Montgomery County.

This 2024 Montgomery County Natural Hazard Mitigation Plan is a multi-jurisdictional plan which considers the impacts of hazards on incorporated cities, villages and unincorporated townships. Montgomery County’s jurisdictions are listed below in **Tables 1.1.1 and 1.1.2**. These areas are also displayed in **Figure 1.1.3** on the following page. The Plan is designed for a five-year implementation period and describes the methods and procedures utilized in its development, provides the results of community involvement activities such as survey collection, identifies the mitigation activities determined to be the most important to the County and its jurisdictions, and establishes a timeline for the implementation of the actions.

Table 1.1.1: Montgomery County Jurisdictions

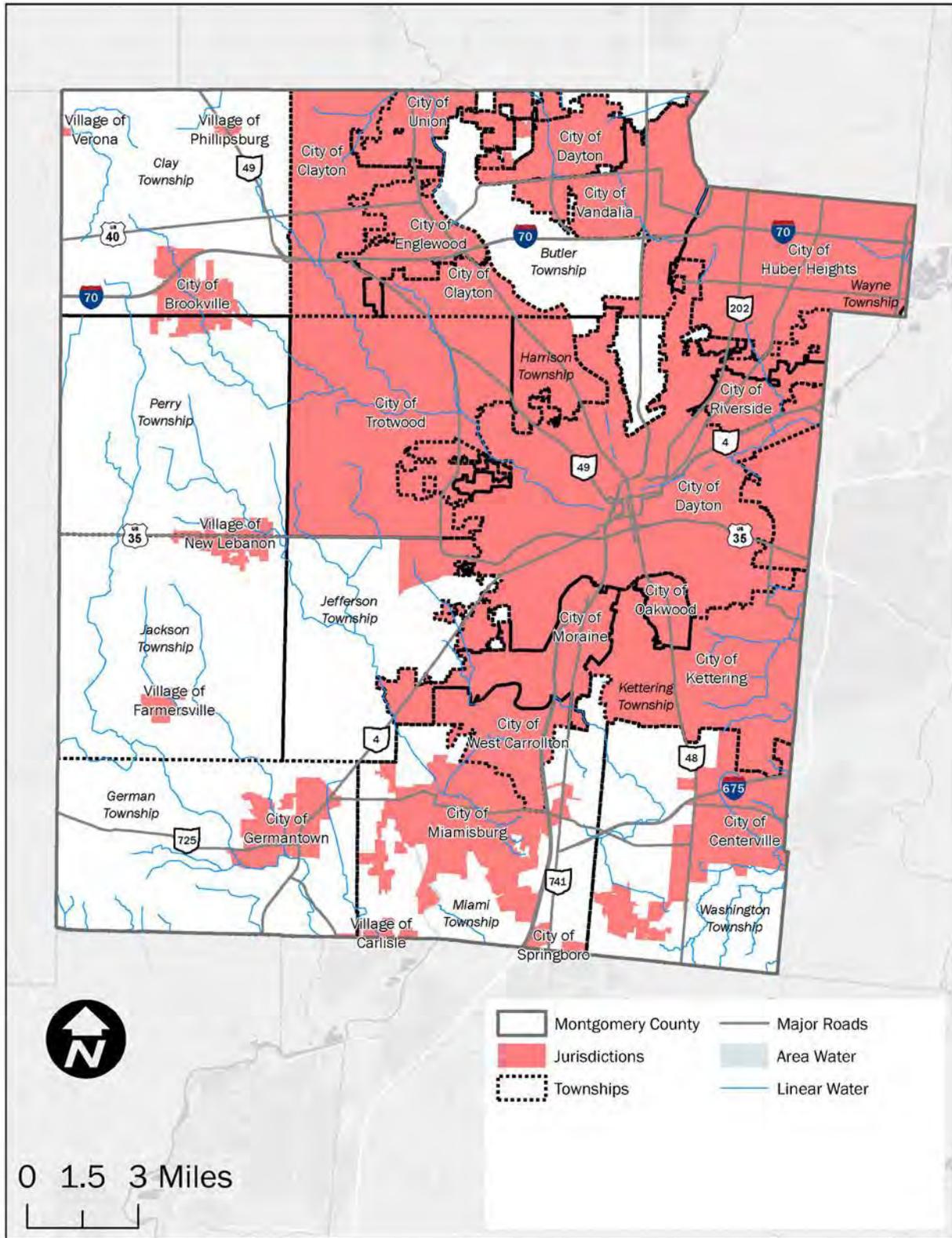
Jurisdictions	
City of Brookville	City of Oakwood
*City of Carlisle	City of Riverside
City of Centerville	*City of Springboro
City of Clayton	City of Trotwood
City of Dayton	City of Union
City of Englewood	City of Vandalia
City of Germantown	City of West Carrollton
City of Huber Heights	Village of Farmersville
City of Kettering	Village of New Lebanon
City of Miamisburg	Village of Phillipsburg
City of Moraine	*Village of Verona

**The majority of these jurisdictions fall outside of Montgomery County and are covered in the plans of adjacent counties.*

Table 1.1.2: Montgomery County Townships

Townships	
Butler Township	Jefferson Township
Clay Township	Miami Township
German Township	Perry Township
Harrison Township	Washington Township
Jackson Township	

Figure 1.1.3: Montgomery County Jurisdictions Map



This Plan is comprised of six chapters, which detail the methods, analysis, and discussion surrounding the various hazards that threaten Montgomery County and its jurisdictions. These chapters are as follows:

- This **Introduction** (Chapter 1) provides a discussion about the general purpose and goals that Montgomery County wishes to achieve throughout the development and implementation of this Plan. This section also includes a summary of the Plan's contents.
- Chapter 2, **History and Demographics**, includes a description of Montgomery County and each participating jurisdiction, including their history, population, and other general information.
- Chapter 3, **Planning Process**, details the process for the development of this Plan. This section includes details about the process used to develop this Plan, including a description of who participated, how the community was involved, which hazards were included in the Plan and why, as well as how the Plan was developed through public meetings, reviews, and evaluations. This section also details the review and incorporation of existing plans, studies, reports, and technical information.
- Chapter 4 contains the **Hazard Identification and Risk Assessment (HIRA)**. This section provides detailed descriptions and a corresponding analysis for each hazard that could potentially affect Montgomery County. The nature, location, extent, historical impact, vulnerability, and likelihood of occurrence for each hazard are provided for each hazard. These analyses include the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; an estimate of the potential dollar losses to vulnerable structures; and a general description of land uses and development trends within the community.
- Chapter 5, **Hazard Mitigation**, outlines the goals, strategies, and actions for the County. The proposed actions are presented in tables, categorized by the associated hazard and community, and then ranked from highest to lowest priority based on feedback received from County officials and participating jurisdictions and stakeholders. Excluded hazards are also documented in this section, along with the rationale for exclusion from the Plan.
- The final chapter (Chapter 6) of this Plan, **Schedule and Maintenance**, provides a summary of the proposed Plan adoption, integration, and maintenance schedule. This section describes how the County will review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five years to continue to be eligible for mitigation project grant funding.

The resulting 2024 Montgomery County Natural Hazard Mitigation Plan will be submitted to the Ohio Emergency Management Agency (Ohio EMA) and subsequently FEMA for their review. Following the agency review, the jurisdictions will then review the Plan for adoption. This hazard mitigation plan serves as a helpful tool for citizens, policymakers, local businesses, and other local stakeholders who all share a public interest in keeping Montgomery County as safe and resilient as possible. As such, this Plan aims to:

- Minimize property damage, economic loss, injury, and loss of human life – to achieve the Plan's main goal of reducing the impact of natural and manmade hazards on the County's economy and the well-being of its citizens.
- Enhance public awareness and education – to widen the public's understanding of natural and manmade hazards and how they might affect public health and safety, the environment, the local economy, and basic day-to-day operations.

- Coordinate inter-jurisdictional preparedness measures – to encourage and ensure multi-jurisdictional cooperation in County-wide mitigation actions and programs so that they may be implemented efficiently and effectively.
- Provide decision-making tools for interested stakeholders – to formulate a comprehensive, updated analysis of Montgomery County’s vulnerability to hazards so that decision-makers can better prepare for natural and manmade disasters.
- Achieve regulatory compliance – to ensure that the County and its political subdivisions meet state and federal mitigation planning requirements so that they may be eligible to participate in and receive funding from grant programs, policies, and regulations.

1.2 Setting

Montgomery County is in the southwestern region of Ohio and has a total area of approximately 461 square miles of which 458 is land and approximately 3.0 square miles is water. The County contains 19 cities, three villages, and nine townships (**Tables 1.1.1 and 1.1.2**). The cities of Carlisle and Springboro, along with the Village of Verona, lie mainly in adjacent counties and these jurisdictions are covered in the hazard mitigation plans of Preble and Warren Counties. The City of Dayton serves as the County seat. Montgomery County is bounded by seven Ohio counties: Miami County to the north, Clark County to the northeast, Greene County to the east, Warren County to the south, Butler County to the southeast, Preble County to the west, and Darke County to the northwest.

Land use patterns in Montgomery County are shown in **Figure 1.2.1**. Land use types include agriculture, commercial, industrial, institutional, and residential. Land cover in Montgomery County is shown in **Figure 1.2.2**. Land cover types include barren land, cultivated crops, developed, forest, hay/pasture, herbaceous/shrub, open water, and wetland.

Figure 1.2.1: Montgomery County Land Use Map

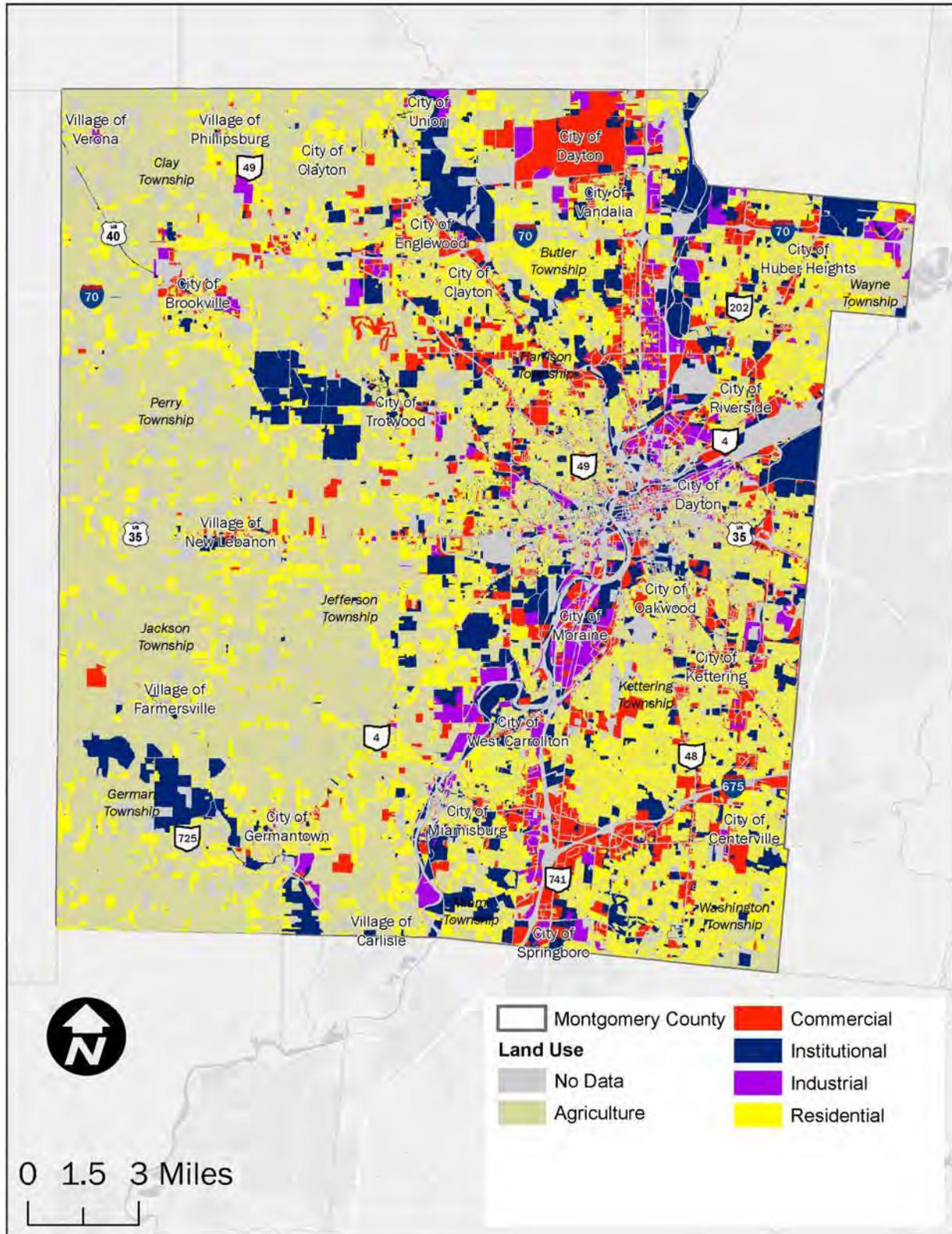
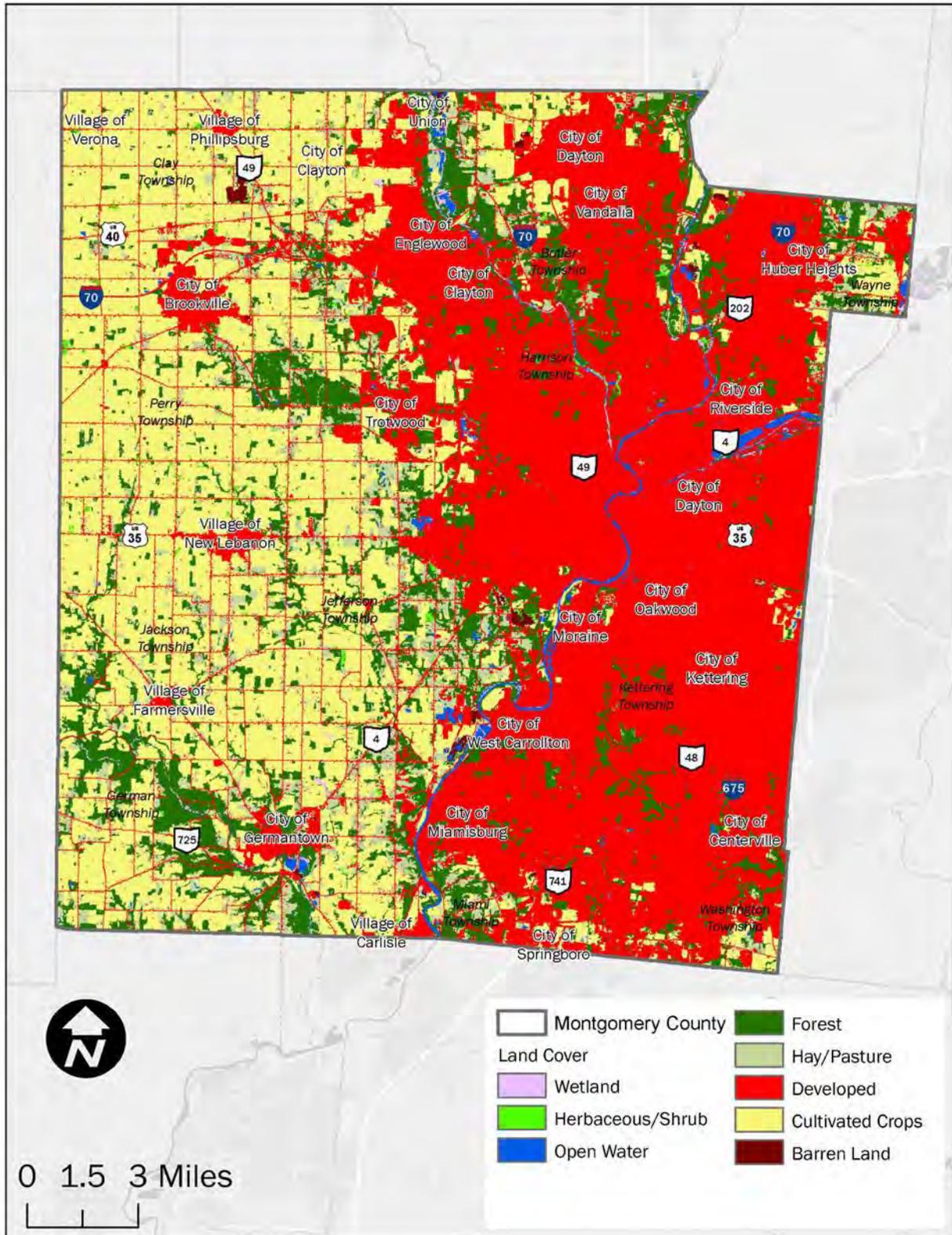


Figure 1.2.2: Montgomery County Land Cover Map



1.3 Region Features

Transportation

Montgomery County contains several major roadways, including several State Routes (SR), two U.S. Highways (US), and three Interstates (I). Major roadways in Montgomery County include SR-49, SR-48, SR-725, SR-123, SR-741, SR-235, SR-4, SR-835, US-35, US-40, I-70, I-75, and I-675.

Montgomery County is home to the Wright Brothers and as such, has several airports; the Dayton-Wright Brothers Airport located in the City of Dayton and the Phillipsburg Airport located in the City of Englewood, are both open to the public. In addition, Moraine Airpark, a privately-owned airport for public use, is in the City of Dayton. Montgomery County is also home to the Dayton International Airport, located nine miles north of the City of Dayton in the City of Vandalia.

Both the CSX Corporation and Norfolk Southern Railway have multiple lines in Montgomery County. The CSX lines run north through the City of Miamisburg, through the City of Dayton to Miami County; northwest out of the City of Dayton towards the City of Trotwood; and north out of Warren County into the City of Germantown. Norfolk Southern Railway runs north through the City of Miamisburg to the City of Dayton, from the City of Dayton to the City of Springfield, and from the City of Dayton towards the City of Kettering.

Natural Features

Table 1.3.1, below, lists Montgomery County parks and nature areas.

Table 1.3.1: Parks & Nature Areas in Montgomery County, Ohio

Parks & Nature Areas	
Art Van Atta Park	Huffman
Arthur O. Fisher	Island
Aullwood Garden	Madison Lakes
Beech Ridge Trail	Meadowlark Trail
Carriage Hill	Possum Creek
Cox Arboretum	RiverScape
Deeds Point	Sugarcreek
Eastwood	Sunrise
Englewood	Sycamore State Park
Germantown	Taylorville
Ghost Hedge Nature Trail	Twin Creek
Heron Run Trail	Wegerzyn Gardens
Hills & Dales	Wesleyan

Montgomery County also has several streams and water bodies which are listed in **Table 1.3.2** below.

Table 1.3.2: Montgomery County Streams and Water Bodies

Water Bodies	
Asher Lake	Moss Creek
Bear Creek	Mud Creek
Crains Run	North Branch Wolf Creek
Diehl Run	Ohnoname 19 Reservoir
Dry Run	Opossum Creek
Drylick Run	Pigeeye Creek
Elk Creek Lake	Poplar Creek
Englewood Recreation Reservoir	Poplar Run
Englewood Reservoir	Razor Run
Garber Run	Sims Pond (historical)
Germantown Reservoir	Spring lake
Guffey Lake	Spring Run
Holes Creek	Stillwater River
Island Park Reservoir	Sunfish Pond
Lake Marinole	Swinging Bridge Lake
Lick Run	Sycamore Creek
Little Bear Creek	Tait Station Reservoir
Little Twin Creek	Taylorville Reservoir
Mad River	Toms Run
Middle Run	Wolf Creek
Mill Creek	Wysong Run
Mill Run	

2 | History & Demographics

2.1 History

Montgomery County ranks as the 37th largest county in the state in terms of square mileage. The county was established on March 24, 1803, by the Ohio Government when they divided Hamilton and Ross counties. Montgomery County was named after General Richard Montgomery, an American Revolution hero. The largest city is the City of Dayton, where 26 percent of the county's population resides.

Montgomery County has submitted 50 places to the National Register of Historic Places. Of these 50 places, three are of national significance and four are of statewide significance. Two notable properties, Dayton Daily News Building and Dayton Women's Club, were submitted to the National Register of Historic Places by The Montgomery County Historical Society. The Dayton Daily News Building was built in 1910 with an addition added in 1922. The Dayton Daily News Building has been recognized as the most endangered historic site in 2017 and 2019 by Preservation Ohio. The Dayton Women's Club was built between 1845 and 1850 by Robert Steele, a Dayton Board of Education member. In 1865 the building was purchased and refurbished by Napoleon Bonapart Darst to the empire-style Victorian that stands today. The Dayton Daily News Building was added to the National Register of Historic Places in 1978, and Dayton Women's club was added in 1975.

Figure 2.1.1: Dayton Daily News Building (Top right and left) and Dayton Women's Club (Lower right and left)



Sources: National Archives Catalog (top and bottom left)

2.2 Communication Outlets

Montgomery County’s primary communication outlets including websites, television, and social media are listed in **Table 2.2.1**, below:

Table 2.2.1: Communication Outlets and Social Media

Communication Type	Source
Website	Montgomery County: https://www.mcoho.org/ Montgomery County Office of Emergency Management: https://www.mcoho.org/201/Emergency-Management Public Health – Dayton and Montgomery County: https://www.phdmc.org/ Montgomery County Sheriff’s Office: https://www.mcohiosheriff.org/ Montgomery County Board of Elections: https://www.montgomery.boe.ohio.gov/ The American Red Cross Miami Valley Chapter: https://www.redcross.org/local/ohio/central-and-southern-ohio/about-us/locations/miami-valley-chapter.html
Social media	Montgomery County: https://www.facebook.com/MontgomeryCounty/ Dayton Convention & Visitors Bureau: https://www.facebook.com/daytoncvb/ Montgomery County Chamber of Commerce: https://www.facebook.com/MontgomeryOhioChamber/ Montgomery County Sheriff: https://www.facebook.com/MontgomeryCountySheriff/
News/Newspaper	Dayton Daily News: https://www.daytondailynews.com/ Consolidated Computer-Aided Dispatch System: https://www.mcohiosheriff.org/support_services/dispatch/regional_dispatch.php Local Radio Stations: 97.5 WTGR; 106.5 WDRK; 89.9 EDPG

2.3 Demographics Overview

This section provides select demographic information to help identify strategies to better serve the county residents during emergency hazard events. The information can be used to understand potential vulnerabilities in subgroups of the population. For example, knowing the number of senior citizens that live alone and that may require additional assistance during an emergency can help assistance organizations anticipate where their services may be needed.

Table 2.3.1, below, provides a summary of the total population changes that have occurred in Montgomery County between the 2010 U.S. Census and the 2022 5-Year American Community Survey (ACS) Estimates based on census data. According to the U.S. Census, Montgomery County’s population decreased by 2,340 people (0.43 percent) between 2010 and 2022. For comparison, the US population grew 9.04 percent and Ohio's population grew 2.49 percent during that period. Five townships experienced population growth: Butler, Clay, German, Miami, and Washington townships. Of the townships experiencing population decline, Jefferson Township experienced the greatest percentage of population decline with a decrease of 1,131 people (16.13 percent).

A more detailed description of population, housing, and income demographics for Montgomery County and each city and village jurisdiction is provided on the following pages.

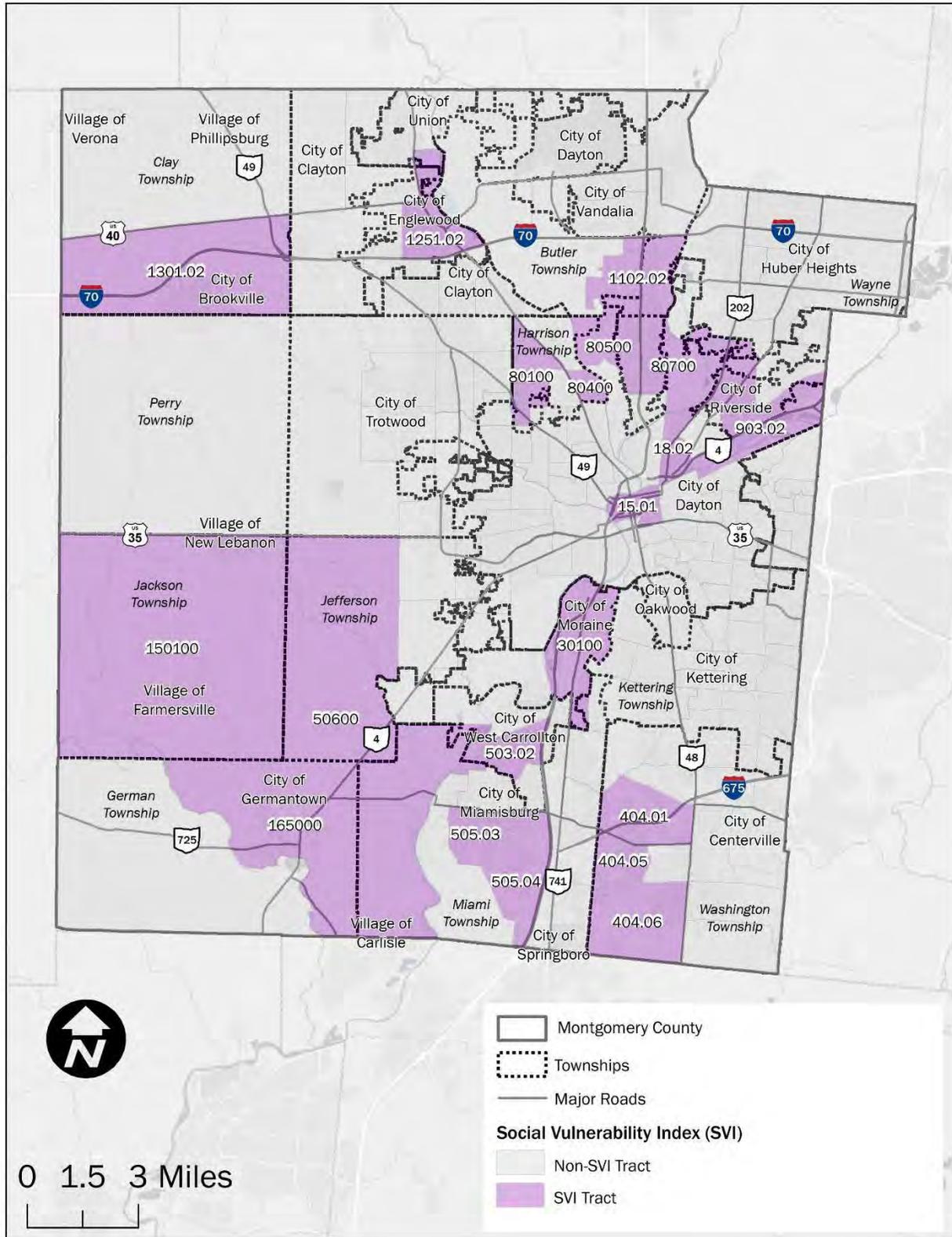
Table 2.3.1: County And Township Population Growth Estimates Between 2010 Census and 2022 5-Year ACS Estimates

County/Township	Total Population 2010 Census	Total Population 2022 Estimate	2010-2022	
			Population Change	Percent Change
Montgomery County	538,461	536,121	-2,340	-0.43%
Butler Township	7,946	8,227	281	3.54%
Clay Township	8,776	8,851	75	0.85%
German Township	8,313	8,731	418	5.03%
Harrison Township	22,717	21,836	-881	-3.88%
Jackson Township	6,333	6,070	-263	-4.15%
Jefferson Township	7,011	5,880	-1,131	-16.13%
Miami Township	49,737	51,966	2,229	4.48%
Perry Township	6,026	5,850	-176	-2.92%
Washington Township	55,847	61,598	5,751	10.30%

Social Vulnerability Tracts

Montgomery County has 156 census tracts total. Out of the 156 census tracts, FEMA uses the top 20 census tracts to estimate structure and vulnerability for social vulnerability. The top 20 census tracts for Montgomery County are shown in **Figure 2.3.1**.

Figure 2.3.1 Social Vulnerability Tracts



Social Vulnerability Index Score

The Social Vulnerability Index Score is a component of the Center for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI) that measures the susceptibility (risk) of social groups to the adverse impacts of natural hazards that may result in disproportionate deaths, injury, loss, or disruption of livelihood. As FEMA explains, the “Social Vulnerability score considers the social, economic, demographic, and housing characteristics of a community that influence its ability to prepare for, respond to, cope with, recover from, and adapt to environmental hazards. The score and rating represent the relative level of a community’s social vulnerability compared to all other communities at the same level (e.g., county level). A community’s Social Vulnerability score is proportional to a community’s risk. A higher Social Vulnerability score results in a higher Risk Index score.”

According to the Center for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI), Montgomery County has a calculated Social Vulnerability Index of 0.98 (on scale of 0 to 1) on a state level, which is considered a high susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S. For comparison, Ohio’s average Social Vulnerability Index is 0.50 on a state level. **Table 2.3.3** reports the SVI scores for Socioeconomic status, housing type and transportation, race and ethnic minority status, and household characteristics for Montgomery County and Ohio State at both the state and nation levels.

The score is calculated using U.S. Census data for 16 social factors, which research literature suggests contributes to the reduction in a community's ability to prepare for, respond to, and recover from hazards. Thus, making the community more vulnerable. Each county is subdivided into census tracts and each census track is ranked on the 16 social factors. The 16 social factors are organized into four themes. Each census track is ranked separately for each theme and receives an overall ranking. The four themes and social factors are described below according to the CDC/ATSDR Social Vulnerability Index:

1. **Socioeconomic Status:** this theme covers socioeconomic status, such as households with income below the 150-percentile poverty level, employment status, housing cost burden, high school diploma status, and if the household has health insurance.
2. **Housing Type and Transportation:** this theme covers multi-unit structures, mobile homes, crowding within households, households without a vehicle, and group quarters.
3. **Race and Ethnic Minority Status:** this theme covers the percentage of Hispanic or Latino (of any race); Black and African American (not Hispanic or Latino); American Indian and Alaska Native (not Hispanic or Latino); Native Hawaiian and Other Pacific Islander (not Hispanic or Latino); Two or More Races (not Hispanic or Latino); and Other Races (not Hispanic or Latino).
4. **Household Characteristics:** this theme covers the elderly population (65 and older), children under 17 years of age, civilians with a disability, single-parent households, and the household’s English language proficiency.

Table 2.3.3 Social Vulnerability Score per Theme for Montgomery County and Ohio

Theme	Montgomery County (Statewide)	Ohio (Statewide)	Montgomery County (Nationwide)	Ohio (Nationwide)
Socioeconomic Status	0.75	0.50	0.58	0.37
Housing Type and Transportation	0.86	0.50	0.69	0.42
Race and Ethnic Minority Status	0.95	0.50	0.67	0.28
Household Characteristics	0.91	0.50	0.69	0.40

2.4 Community Profiles

Montgomery County

Montgomery County is in southwest Ohio, and it is part of the Dayton-Springfield-Sidney Combined Statistical Area. As of the 2022 5-Year ACS Estimates (census), the population was 536,121 making it the 5th most populated county in Ohio. The City of Dayton is the largest city and serves as the county seat.

Tables 2.4.1 to 2.4.6 summarize Montgomery County, Ohio’s population, housing statistics, and income statistics. There are 228,062 households of which 24.16 percent have at least one member under 18 years of age, and 31.30 percent have members 65 years and over. The largest percentage of households (17.50 percent) had an income between \$50,000 to \$74,999; approximately 5.60 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the Montgomery County, Ohio, was the White (non-Hispanic) group, which makes up 69.26 percent of the population. Black or African American is the second largest race (20.36 percent). Approximately 2.23 percent of the city’s population speak Spanish at home. In addition, 1.44 percent speak another Indo-European language, 1.60 percent speak an Asian and Pacific Island language, and 1.11 percent speak another language.

Table 2.4.1: Montgomery County Population by Age Statistics 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	536,121	100%
Under 18 Years	118,071	22.02%
18 to 24 Years	50,039	9.33%
25 to 34 Years	73,548	13.72%
35 to 44 Years	63,142	11.78%
45 to 54 Years	62,596	11.68%
55 to 64 Years	71,127	13.27%
65 Years and Over	97,598	18.20%

Table 2.4.2: Montgomery County Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	252,061	100%
Occupied Housing Units	228,062	90.48%
Housing Units - Mobile Homes	2,542	1.11%
Vacant Housing Units	23,999	9.52%

Table 2.4.3: Montgomery County Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	228,062	
Average Household Size	2.27	
Households with People Under 18 Years	55,093	24.16%
Households with People 65+ Years	71,383	31.30%
Householder Living Alone 65+ Years	33,069	14.50%
No Vehicle Available	20,507	8.99%
With a Broadband Internet Subscription	201,541	88.37%

Table 2.4.4: Montgomery County Population by Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	536,121	100%
White	371,335	69.26%
Black or African American	109,166	20.36%
American Indian and Alaska Native	509	0.09%
Asian	11,915	2.22%
Native Hawaiian and Other Pacific Islander	90	0.02%
Some Other Race	1,823	0.34%
Two or More Races	22,941	4.28%
Hispanic or Latino (of any race)	18,342	3.42%

Table 2.4.5: Montgomery County Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	504,221	100%
English only	472,092	93.63%
Spanish	11,224	2.23%
Other Indo-European languages	7,255	1.44%
Asian and Pacific Island languages	8,076	1.60%
Other languages	5,574	1.11%

Table 2.4.6: Montgomery County Household Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Number of Households
Less than \$10,000	5.60%
\$10,000 to \$14,999	5.30%
\$15,000 to \$24,999	8.60%
\$25,000 to \$34,999	8.60%
\$35,000 to \$49,999	13.10%
\$50,000 to \$74,999	17.50%
\$75,000 to \$99,999	13.60%
\$100,000 to \$149,999	15.20%
\$150,000 to \$199,999	6.50%
\$200,000 or more	6.10%
Median Household Income	\$61,942
Mean Household Income	\$82,621

City of Brookville

Tables 2.4.7 to 2.4.12 summarize the City of Brookville’s population, housing statistics, and income statistics. There are 2,582 households of which 21.57 percent have at least one member under 18 years of age, and 43.80 percent have members 65 years and over. The largest percentage of households (24.10 percent) had an income between \$50,000 to \$74,999; approximately 3.30 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Brookville was the White (non-Hispanic) group, which makes up 88.30 percent of the population. Asian is the second largest race (5.80 percent). Approximately 0.17 percent of the city’s population speak Spanish at home. In addition, 4.96 percent speak another Indo-European language, 1.11 percent speak an Asian and Pacific Island language, and 0.00 percent speak another language.

Table 2.4.7: City of Brookville Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	6,035	100%
Under 18 Years	1,298	21.51%
18 to 24 Years	209	3.46%
25 to 34 Years	715	11.85%
35 to 44 Years	592	9.81%
45 to 54 Years	640	10.60%
55 to 64 Years	762	12.63%
65 Years and Over	1,819	30.14%

Table 2.4.8: City of Brookville Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	2,737	100%
Occupied Housing Units	2,582	94.34%
Housing Units - Mobile Homes	12	0.46%
Vacant Housing Units	155	5.66%

Table 2.4.9: City of Brookville Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	2,582	-
Average Household Size	2.27	-
Households with People Under 18 Years	557	21.57%
Households with People 65+ Years	1,131	43.80%
Householder Living Alone 65+ Years	568	22.00%
No Vehicle Available	207	8.02%
With a Broadband Internet Subscription	2,160	83.66%

Table 2.4.10: City of Brookville Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	6,035	100%
White	5,329	88.30%
Black or African American	61	1.01%
American Indian and Alaska Native	0	0.00%
Asian	350	5.80%
Native Hawaiian and Other Pacific Islander	0	0.00%
Some Other Race	14	0.23%
Two or More Races	230	3.81%
Hispanic or Latino (of any race)	51	0.85%

Table 2.4.11: City of Brookville Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	5,764	100%
English only	5,404	93.75%
Spanish	10	0.17%
Other Indo-European languages	286	4.96%
Asian and Pacific Island languages	64	1.11%
Other languages	0	0.00%

Table 2.4.12: City of Brookville Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	3.30%
\$10,000 to \$14,999	4.70%
\$15,000 to \$24,999	10.30%
\$25,000 to \$34,999	7.40%
\$35,000 to \$49,999	12.20%
\$50,000 to \$74,999	24.10%
\$75,000 to \$99,999	13.10%
\$100,000 to \$149,999	14.70%
\$150,000 to \$199,999	4.80%
\$200,000 or more	5.40%
Median Household Income	\$59,158
Mean Household Income	\$81,896

***City of Carlisle (This majority of this jurisdiction lies in Warren County)**

Tables 2.4.13 to 2.4.18 summarize the City of Carlisle’s population, housing statistics, and income statistics. There are 2,231 households of which 22.81 percent have at least one member under 18 years of age, and 39.10 percent have members 65 years and over. The largest percentage of households (19.00 percent) had an income between \$50,000 to \$74,999; approximately 5.20 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Carlisle was the White (non-Hispanic) group, which makes up 90.85 percent of the population. Asian is the second largest race (3.24 percent). Approximately 1.94 percent of the city’s population speak Spanish at home. In addition, 3.85 percent speak another Indo-European language, 0.00 percent speak an Asian and Pacific Island language, and 0.00 percent speak another language.

Table 2.4.13: City of Carlisle Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	5,488	100%
Under 18 Years	1,050	19.13%
18 to 24 Years	741	13.50%
25 to 34 Years	519	9.46%
35 to 44 Years	616	11.22%
45 to 54 Years	763	13.90%
55 to 64 Years	562	10.24%
65 Years and Over	1,237	22.54%

Table 2.4.14: City of Carlisle Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	2,435	100%
Occupied Housing Units	2,231	91.62%
Housing Units - Mobile Homes	25	1.12%
Vacant Housing Units	204	8.38%

Table 2.4.15: City of Carlisle Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	2,231	-
Average Household Size	2.43	-
Households with People Under 18 Years	509	22.81%
Households with People 65+ Years	872	39.10%
Householder Living Alone 65+ Years	308	13.80%
No Vehicle Available	93	4.17%
With a Broadband Internet Subscription	1,969	88.26%

Table 2.4.16: City of Carlisle Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	5,488	100%
White	4,986	90.85%
Black or African American	17	0.31%
American Indian and Alaska Native	32	0.58%
Asian	178	3.24%
Native Hawaiian and Other Pacific Islander	0	0.00%
Some Other Race	0	0.00%
Two or More Races	142	2.59%
Hispanic or Latino (of any race)	133	2.42%

Table 2.4.17: City of Carlisle Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	5,250	100%
English only	4,946	94.21%
Spanish	102	1.94%
Other Indo-European languages	202	3.85%
Asian and Pacific Island languages	0	0.00%
Other languages	0	0.00%

Table 2.4.18: City of Carlisle Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	5.20%
\$10,000 to \$14,999	2.90%
\$15,000 to \$24,999	11.10%
\$25,000 to \$34,999	7.40%
\$35,000 to \$49,999	8.50%
\$50,000 to \$74,999	19.00%
\$75,000 to \$99,999	17.40%
\$100,000 to \$149,999	18.60%
\$150,000 to \$199,999	5.60%
\$200,000 or more	4.30%
Median Household Income	\$69,513
Mean Household Income	\$86,672

City of Centerville

Tables 2.4.19 to 2.4.24 summarize the City of Centerville’s population, housing statistics, and income statistics. There are 11,489 households of which 21.47 percent have at least one member under 18 years of age, and 41.70 percent have members 65 years and over. The largest percentage of households (17.50 percent) had an income between \$100,000 to \$149,999; approximately 2.80 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Centerville was the White (non-Hispanic) group, which makes up 83.37 percent of the population. Black or African American is the second largest race (5.70 percent). Approximately 2.46 percent of the city’s population speak Spanish at home. In addition, 3.68 percent speak another Indo-European language, 2.20 percent speak an Asian and Pacific Island language, and 1.81 percent speak another language.

Table 2.4.19: City of Centerville Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	24,510	100%
Under 18 Years	4,335	17.69%
18 to 24 Years	1,481	6.04%
25 to 34 Years	3,050	12.44%
35 to 44 Years	2,501	10.20%
45 to 54 Years	2,382	9.72%
55 to 64 Years	3,567	14.55%
65 Years and More	7,194	29.35%

Table 2.4.20: City of Centerville Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	12,001	100%
Occupied Housing Units	11,489	95.73%
Housing Units - Mobile Homes	24	0.21%
Vacant Housing Units	512	4.27%

Table 2.4.21: City of Centerville Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	11,489	-
Average Household Size	2.07	-
Households with People Under 18 Years	2,467	21.47%
Households with People 65+ Years	4,791	41.70%
Householder Living Alone 65+ Years	2,286	19.90%
No Vehicle Available	767	6.68%
With a Broadband Internet Subscription	10,690	93.05%

Table 2.4.22: City of Centerville Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	24,510	100%
White	20,435	83.37%
Black or African American	1,398	5.70%
American Indian or Alaska Native	12	0.05%
Asian	1,094	4.46%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	71	0.29%
Two or More Races	438	1.79%
Hispanic or Latino (of any race)	1,062	4.33%

Table 2.4.23: City of Centerville Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	23,113	100%
English only	20,766	89.85%
Spanish	569	2.46%
Other Indo-European languages	851	3.68%
Asian and Pacific Island languages	508	2.20%
Other languages	419	1.81%

Table 2.4.24: City of Centerville Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	2.80%
\$10,000 to \$14,999	3.50%
\$15,000 to \$24,999	6.80%
\$25,000 to \$34,999	7.00%
\$35,000 to \$49,999	12.80%
\$50,000 to \$74,999	14.60%
\$75,000 to \$99,999	13.90%
\$100,000 to \$149,999	17.50%
\$150,000 to \$199,999	11.40%
\$200,000 or more	9.80%
Median Household Income	\$79,509
Mean Household Income	\$103,868

City of Clayton

Tables 2.4.25 to 2.4.30 summarize the City of Clayton’s population, housing statistics, and income statistics. There are 5,453 households of which 24.70 percent have at least one member under 18 years of age, and 38.90 percent have members 65 years and over. The largest percentage of households (20.00 percent) had an income between \$100,000 to \$149,999; approximately 1.20 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Clayton was the White (non-Hispanic) group, which makes up 61.74 percent of the population. Black or African American is the second largest race (29.39 percent). Approximately 1.57 percent of the city’s population speak Spanish at home. In addition, 2.04 percent speak another Indo-European language, 0.23 percent speak an Asian and Pacific Island language, and 0.26 percent speak another language.

Table 2.4.25: City of Clayton Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	13,292	100%
Under 18 Years	2,770	20.84%
18 to 24 Years	735	5.53%
25 to 34 Years	1,674	12.59%
35 to 44 Years	1,257	9.46%
45 to 54 Years	1,664	12.52%
55 to 64 Years	2,028	15.26%
65 Years and More	3,164	23.80%

Table 2.4.26: City of Clayton Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	5,663	100%
Occupied Housing Units	5,453	96.29%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	210	3.71%

Table 2.4.27: City of Clayton Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	5,453	-
Average Household Size	2.42	-
Households with People Under 18 Years	1,347	24.70%
Households with People 65+ Years	2,121	38.90%
Householder Living Alone 65+ Years	654	12.00%
No Vehicle Available	52	0.95%
With a Broadband Internet Subscription	5,189	95.16%

Table 2.4.28: City of Clayton Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	13,292	100%
White	8,206	61.74%
Black or African American	3,907	29.39%
American Indian or Alaska Native	58	0.44%
Asian	201	1.51%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	41	0.31%
Two or More Races	660	4.97%
Hispanic or Latino (of any race)	219	1.65%

Table 2.4.29: City of Clayton Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	12,395	100%
English only	11,886	95.89%
Spanish	195	1.57%
Other Indo-European languages	253	2.04%
Asian and Pacific Island languages	29	0.23%
Other languages	32	0.26%

Table 2.4.30: City of Clayton Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.20%
\$10,000 to \$14,999	2.90%
\$15,000 to \$24,999	3.10%
\$25,000 to \$34,999	6.70%
\$35,000 to \$49,999	10.50%
\$50,000 to \$74,999	14.20%
\$75,000 to \$99,999	19.80%
\$100,000 to \$149,999	20.00%
\$150,000 to \$199,999	11.90%
\$200,000 or more	9.70%
Median Household Income	\$89,282
Mean Household Income	\$104,234

City of Dayton

Tables 2.4.31 to 2.4.36 summarize the City of Dayton’s population, housing statistics, and income statistics. There are 57,362 households of which 21.54 percent have at least one member under 18 years of age, and 25.50 percent have members 65 years and over. The largest percentage of households (17.10 percent) had an income between \$50,000 to \$74,999; approximately 10.10 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Dayton was the White (non-Hispanic) group, which makes up 50.29 percent of the population. Black or African American is the second largest race (37.88 percent). Approximately 3.62 percent of the city’s population speak Spanish at home. In addition, 1.11 percent speak another Indo-European language, 1.19 percent speak an Asian and Pacific Island language, and 1.23 percent speak another language.

Table 2.4.31: City of Dayton Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	137,305	100%
Under 18 Years	28,707	20.91%
18 to 24 Years	20,723	15.09%
25 to 34 Years	21,171	15.42%
35 to 44 Years	15,845	11.54%
45 to 54 Years	14,959	10.89%
55 to 64 Years	17,486	12.74%
65 Years and More	18,414	13.41%

Table 2.4.32: City of Dayton Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	137,305	100%
Occupied Housing Units	28,707	20.91%
Housing Units - Mobile Homes	20,723	15.09%
Vacant Housing Units	21,171	15.42%

Table 2.4.33: City of Dayton Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	57,362	-
Average Household Size	2.17	-
Households with People Under 18 Years	12,358	21.54%
Households with People 65+ Years	14,627	25.50%
Householder Living Alone 65+ Years	7,801	13.60%
No Vehicle Available	10,036	17.50%
With a Broadband Internet Subscription	47,206	82.29%

Table 2.4.34: City of Dayton Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	137,305	100%
White	69,056	50.29%
Black or African American	52,010	37.88%
American Indian or Alaska Native	257	0.19%
Asian	1,767	1.29%
Native Hawaiian or Other Pacific Islander	26	0.02%
Some Other Race (One Race)	611	0.44%
Two or More Races	6,406	4.67%
Hispanic or Latino (of any race)	7,172	5.22%

Table 2.4.35: City of Dayton Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	128,858	100%
English only	119,637	92.84%
Spanish	4,671	3.62%
Other Indo-European languages	1,429	1.11%
Asian and Pacific Island languages	1,539	1.19%
Other languages	1,582	1.23%

Table 2.4.36: City of Dayton Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	10.10%
\$10,000 to \$14,999	8.70%
\$15,000 to \$24,999	13.70%
\$25,000 to \$34,999	10.80%
\$35,000 to \$49,999	14.30%
\$50,000 to \$74,999	17.10%
\$75,000 to \$99,999	10.20%
\$100,000 to \$149,999	9.40%
\$150,000 to \$199,999	3.20%
\$200,000 or more	2.40%
Median Household Income	\$41,443
Mean Household Income	\$57,574

City of Englewood

Tables 2.4.37 to 2.4.42 summarize the City of Englewood’s population, housing statistics, and income statistics. There are 5,636 households of which 24.89 percent have at least one member under 18 years of age, and 36.60 percent have members 65 years and over. The largest percentage of households (17.20 percent) had an income between \$50,000 to \$74,999; approximately 2.40 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Englewood was the White (non-Hispanic) group, which makes up 76.80 percent of the population. Black or African American is the second largest race (15.35 percent). Approximately 1.55 percent of the city’s population speak Spanish at home. In addition, 0.28 percent speak another Indo-European language, 1.13 percent speak an Asian and Pacific Island language, and 1.09 percent speak another language.

Table 2.4.37: City of Englewood Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	13,433	100%
Under 18 Years	3,283	24.44%
18 to 24 Years	784	5.84%
25 to 34 Years	1,392	10.36%
35 to 44 Years	1,606	11.96%
45 to 54 Years	1,345	10.01%
55 to 64 Years	2,050	15.26%
65 Years and More	2,973	22.13%

Table 2.4.38: City of Englewood Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	5,938	100%
Occupied Housing Units	5,636	94.91%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	302	5.09%

Table 2.4.39: City of Englewood Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	5,636	-
Average Household Size	2.33	-
Households with People Under 18 Years	1,403	24.89%
Households with People 65+ Years	2,063	36.60%
Householder Living Alone 65+ Years	1,088	19.30%
No Vehicle Available	335	5.94%
With a Broadband Internet Subscription	5,245	93.06%

Table 2.4.40: City of Englewood Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	13,433	100%
White	10,317	76.80%
Black or African American	2,062	15.35%
American Indian or Alaska Native	8	0.06%
Asian	127	0.95%
Native Hawaiian or Other Pacific Islander	5	0.04%
Some Other Race (One Race)	24	0.18%
Two or More Races	761	5.67%
Hispanic or Latino (of any race)	129	0.96%

Table 2.4.41: City of Englewood Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	12,598	100%
English only	12,089	95.96%
Spanish	195	1.55%
Other Indo-European languages	35	0.28%
Asian and Pacific Island languages	142	1.13%
Other languages	137	1.09%

Table 2.4.42: City of Englewood Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	2.40%
\$10,000 to \$14,999	8.50%
\$15,000 to \$24,999	4.60%
\$25,000 to \$34,999	7.80%
\$35,000 to \$49,999	14.40%
\$50,000 to \$74,999	17.20%
\$75,000 to \$99,999	12.30%
\$100,000 to \$149,999	16.80%
\$150,000 to \$199,999	10.90%
\$200,000 or more	5.00%
Median Household Income	\$67,769
Mean Household Income	\$85,686

City of Germantown

Tables 2.4.43 to 2.4.48 summarize the City of Germantown’s population, housing statistics, and income statistics. There are 2,212 households of which 30.65 percent have at least one member under 18 years of age, and 34.40 percent have members 65 years and over. The largest percentage of households (31.00 percent) had an income between \$100,000 to \$149,999; approximately 1.40 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Germantown was the White (non-Hispanic) group, which makes up 95.76 percent of the population. Two or More Races is the second largest race (2.46 percent). Approximately 0.00 percent of the city’s population speak Spanish at home. In addition, 0.17 percent speak another Indo-European language.

Table 2.4.43: City of Germantown Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	5,784	100%
Under 18 Years	1,425	24.64%
18 to 24 Years	674	11.65%
25 to 34 Years	422	7.30%
35 to 44 Years	447	7.73%
45 to 54 Years	995	17.20%
55 to 64 Years	791	13.68%
65 Years and More	1,030	17.81%

Table 2.4.44: City of Germantown Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	2,351	100%
Occupied Housing Units	2,212	94.09%
Housing Units - Mobile Homes	46	2.08%
Vacant Housing Units	139	5.91%

Table 2.4.45: City of Germantown Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	2,212	-
Average Household Size	2.59	-
Households with People Under 18 Years	678	30.65%
Households with People 65+ Years	761	34.40%
Householder Living Alone 65+ Years	361	16.30%
No Vehicle Available	107	4.84%
With a Broadband Internet Subscription	2,008	90.78%

Table 2.4.46: City of Germantown Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	5,784	100%
White	5,539	95.76%
Black or African American	0	0.00%
American Indian or Alaska Native	0	0.00%
Asian	0	0.00%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	142	2.46%
Hispanic or Latino (of any race)	103	1.78%

Table 2.4.47: City of Germantown Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	5,347	100%
English only	5,338	99.83%
Spanish	0	0.00%
Other Indo-European languages	9	0.17%
Asian and Pacific Island languages	0	0.00%
Other languages	0	0.00%

Table 2.4.48: City of Germantown Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.40%
\$10,000 to \$14,999	4.60%
\$15,000 to \$24,999	8.00%
\$25,000 to \$34,999	3.40%
\$35,000 to \$49,999	11.90%
\$50,000 to \$74,999	12.20%
\$75,000 to \$99,999	22.50%
\$100,000 to \$149,999	31.00%
\$150,000 to \$199,999	3.00%
\$200,000 or more	1.90%
Median Household Income	\$86,524
Mean Household Income	\$84,449

City of Huber Heights

Tables 2.4.49 to 2.4.54 summarize the City of Huber Heights’s population, housing statistics, and income statistics. There are 16,969 households of which 30.18 percent have at least one member under 18 years of age, and 29.90 percent have members 65 years and over. The largest percentage of households (21.40 percent) had an income between \$100,000 to \$149,999; approximately 3.60 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Huber Heights was the White (non-Hispanic) group, which makes up 74.13 percent of the population. Black or African American is the second largest race (15.72 percent). Approximately 2.13 percent of the city’s population speak Spanish at home. In addition, 1.85 percent speak another Indo-European language, 4.98 percent speak an Asian and Pacific Island language, and 1.56 percent speak another language.

Table 2.4.49: City of Huber Heights Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	43,095	100%
Under 18 Years	10,955	25.42%
18 to 24 Years	3,477	8.07%
25 to 34 Years	6,293	14.60%
35 to 44 Years	5,425	12.59%
45 to 54 Years	5,199	12.06%
55 to 64 Years	4,894	11.36%
65 Years and More	6,852	15.90%

Table 2.4.50: City of Huber Heights Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	17,491	100%
Occupied Housing Units	16,969	97.02%
Housing Units - Mobile Homes	119	0.70%
Vacant Housing Units	522	2.98%

Table 2.4.51: City of Huber Heights Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	16,969	-
Average Household Size	2.53	-
Households with People Under 18 Years	5,122	30.18%
Households with People 65+ Years	5,074	29.90%
Householder Living Alone 65+ Years	2,019	11.90%
No Vehicle Available	716	4.22%
With a Broadband Internet Subscription	15,778	92.98%

Table 2.4.52: City of Huber Heights Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	43,095	100%
White	31,947	74.13%
Black or African American	6,773	15.72%
American Indian or Alaska Native	48	0.11%
Asian	1,103	2.56%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	126	0.29%
Two or More Races	1,864	4.33%
Hispanic or Latino (of any race)	1,234	2.86%

Table 2.4.53: City of Huber Heights Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	40,014	100%
English only	35,800	89.47%
Spanish	853	2.13%
Other Indo-European languages	742	1.85%
Asian and Pacific Island languages	1,993	4.98%
Other languages	626	1.56%

Table 2.4.54: City of Huber Heights Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	3.60%
\$10,000 to \$14,999	2.60%
\$15,000 to \$24,999	4.50%
\$25,000 to \$34,999	7.70%
\$35,000 to \$49,999	13.30%
\$50,000 to \$74,999	17.50%
\$75,000 to \$99,999	16.40%
\$100,000 to \$149,999	21.40%
\$150,000 to \$199,999	7.50%
\$200,000 or more	5.50%
Median Household Income	\$75,903
Mean Household Income	\$88,359

City of Kettering

Tables 2.4.55 to 2.4.60 summarize the City of Kettering’s population, housing statistics, and income statistics. There are 26,355 households of which 23.96 percent have at least one member under 18 years of age, and 31.00 percent have members 65 years and over. The largest percentage of households (17.90 percent) had an income between \$50,000 to \$74,999; approximately 4.30 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Kettering was the White (non-Hispanic) group, which makes up 85.95 percent of the population. Black or African American is the second largest race (5.59 percent). Approximately 1.42 percent of the city’s population speak Spanish at home. In addition, 1.54 percent speak another Indo-European language, 1.19 percent speak an Asian and Pacific Island language, and 2.25 percent speak another language.

Table 2.4.55: City of Kettering Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	57,707	100%
Under 18 Years	12,123	21.01%
18 to 24 Years	4,324	7.49%
25 to 34 Years	9,118	15.80%
35 to 44 Years	7,082	12.27%
45 to 54 Years	6,175	10.70%
55 to 64 Years	7,790	13.50%
65 Years and More	11,095	19.23%

Table 2.4.56: City of Kettering Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	27,764	100%
Occupied Housing Units	26,355	94.93%
Housing Units - Mobile Homes	111	0.42%
Vacant Housing Units	1,409	5.07%

Table 2.4.57: City of Kettering Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	26,355	-
Average Household Size	2.17	-
Households with People Under 18 Years	6,314	23.96%
Households with People 65+ Years	8,170	31.00%
Householder Living Alone 65+ Years	3,953	15.00%
No Vehicle Available	1,555	5.90%
With a Broadband Internet Subscription	24,308	92.23%

Table 2.4.58: City of Kettering Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	57,707	100%
White	49,600	85.95%
Black or African American	3,224	5.59%
American Indian or Alaska Native	7	0.01%
Asian	1,255	2.17%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	221	0.38%
Two or More Races	2,083	3.61%
Hispanic or Latino (of any race)	1,317	2.28%

Table 2.4.59: City of Kettering Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	54,431	100%
English only	50,946	93.60%
Spanish	775	1.42%
Other Indo-European languages	837	1.54%
Asian and Pacific Island languages	650	1.19%
Other languages	1,223	2.25%

Table 2.4.60: City of Kettering Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	4.30%
\$10,000 to \$14,999	3.20%
\$15,000 to \$24,999	7.50%
\$25,000 to \$34,999	8.60%
\$35,000 to \$49,999	12.60%
\$50,000 to \$74,999	17.90%
\$75,000 to \$99,999	17.20%
\$100,000 to \$149,999	17.20%
\$150,000 to \$199,999	6.30%
\$200,000 or more	5.10%
Median Household Income	\$69,818
Mean Household Income	\$88,436

City of Miamisburg

Tables 2.4.61 to 2.4.66 summarize the City of Miamisburg’s population, housing statistics, and income statistics. There are 7,560 households of which 30.29 percent have at least one member under 18 years of age, and 33.50 percent have members 65 years and over. The largest percentage of households (22.90 percent) had an income between \$100,000 to \$149,999; approximately 2.70 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Miamisburg was the White (non-Hispanic) group, which makes up 91.34 percent of the population. Two or More Races is the second largest race (2.79 percent). Approximately 0.83 percent of the city’s population speak Spanish at home. In addition, 0.49 percent speak another Indo-European language, 1.97 percent speak an Asian and Pacific Island language, and 0.08 percent speak another language.

Table 2.4.61: City of Miamisburg Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	19,877	100%
Under 18 Years	4,615	23.22%
18 to 24 Years	1,271	6.39%
25 to 34 Years	2,710	13.63%
35 to 44 Years	2,423	12.19%
45 to 54 Years	2,090	10.51%
55 to 64 Years	3,141	15.80%
65 Years and More	3,627	18.25%

Table 2.4.62: City of Miamisburg Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	7,890	100%
Occupied Housing Units	7,560	95.82%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	330	4.18%

Table 2.4.63: City of Miamisburg Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	7,560	-
Average Household Size	2.59	-
Households with People Under 18 Years	2,290	30.29%
Households with People 65+ Years	2,533	33.50%
Householder Living Alone 65+ Years	1,043	13.80%
No Vehicle Available	404	5.34%
With a Broadband Internet Subscription	6,654	88.02%

Table 2.4.64: City of Miamisburg Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	19,877	100%
White	18,156	91.34%
Black or African American	534	2.69%
American Indian or Alaska Native	57	0.29%
Asian	288	1.45%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	33	0.17%
Two or More Races	554	2.79%
Hispanic or Latino (of any race)	255	1.28%

Table 2.4.65: City of Miamisburg Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	18,699	100%
English only	18,068	96.63%
Spanish	156	0.83%
Other Indo-European languages	92	0.49%
Asian and Pacific Island languages	368	1.97%
Other languages	15	0.08%

Table 2.4.66: City of Miamisburg Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	2.70%
\$10,000 to \$14,999	3.70%
\$15,000 to \$24,999	5.00%
\$25,000 to \$34,999	7.30%
\$35,000 to \$49,999	13.00%
\$50,000 to \$74,999	18.40%
\$75,000 to \$99,999	10.30%
\$100,000 to \$149,999	22.90%
\$150,000 to \$199,999	8.00%
\$200,000 or more	8.60%
Median Household Income	\$74,711
Mean Household Income	\$93,130

City of Moraine

Tables 2.4.67 to 2.4.72 summarize the City of Moraine’s population, housing statistics, and income statistics. There are 2,687 households of which 27.43 percent have at least one member under 18 years of age, and 26.20 percent have members 65 years and over. The largest percentage of households (16.40 percent) had an income between \$50,000 to \$74,999; approximately 8.90 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Moraine was the White (non-Hispanic) group, which makes up 70.64 percent of the population. Black or African American is the second largest race (14.70 percent). Approximately 5.88 percent of the city’s population speak Spanish at home. In addition, 0.00 percent speak another Indo-European language, 1.52 percent speak an Asian and Pacific Island language, and 0.31 percent speak another language.

Table 2.4.67: City of Moraine Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	6,484	100%
Under 18 Years	1,881	29.01%
18 to 24 Years	477	7.36%
25 to 34 Years	975	15.04%
35 to 44 Years	855	13.19%
45 to 54 Years	528	8.14%
55 to 64 Years	845	13.03%
65 Years and More	923	14.24%

Table 2.4.68: City of Moraine Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	3,088	100%
Occupied Housing Units	2,687	87.01%
Housing Units - Mobile Homes	96	3.57%
Vacant Housing Units	401	12.99%

Table 2.4.69: City of Moraine Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	2,687	-
Average Household Size	2.37	-
Households with People Under 18 Years	737	27.43%
Households with People 65+ Years	704	26.20%
Householder Living Alone 65+ Years	398	14.80%
No Vehicle Available	234	8.71%
With a Broadband Internet Subscription	2,239	83.33%

Table 2.4.70: City of Moraine Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	6,484	100%
White	4,580	70.64%
Black or African American	953	14.70%
American Indian or Alaska Native	0	0.00%
Asian	129	1.99%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	167	2.58%
Hispanic or Latino (of any race)	655	10.10%

Table 2.4.71: City of Moraine Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	6,174	100%
English only	5,698	92.29%
Spanish	363	5.88%
Other Indo-European languages	0	0.00%
Asian and Pacific Island languages	94	1.52%
Other languages	19	0.31%

Table 2.4.72: City of Moraine Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	8.90%
\$10,000 to \$14,999	7.50%
\$15,000 to \$24,999	10.90%
\$25,000 to \$34,999	16.00%
\$35,000 to \$49,999	13.20%
\$50,000 to \$74,999	16.40%
\$75,000 to \$99,999	10.80%
\$100,000 to \$149,999	11.70%
\$150,000 to \$199,999	3.20%
\$200,000 or more	1.30%
Median Household Income	\$40,793
Mean Household Income	\$56,293

City of Oakwood

Tables 2.4.73 to 2.4.78 summarize the City of Oakwood’s population, housing statistics, and income statistics. There are 3,610 households of which 40.11 percent have at least one member under 18 years of age, and 23.00 percent have members 65 years and over. The largest percentage of households (29.10 percent) had an income of \$200,000 or more; approximately 1.30 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Oakwood was the White (non-Hispanic) group, which makes up 91.53 percent of the population. Two or More Races is the second largest race (3.32 percent). Approximately 0.81 percent of the city’s population speak Spanish at home. In addition, 1.52 percent speak another Indo-European language, 2.76 percent speak an Asian and Pacific Island language, and 0.17 percent speak another language.

Table 2.4.73: City of Oakwood Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	9,496	100%
Under 18 Years	2,845	29.96%
18 to 24 Years	422	4.44%
25 to 34 Years	998	10.51%
35 to 44 Years	1,198	12.62%
45 to 54 Years	1,895	19.96%
55 to 64 Years	1,011	10.65%
65 Years and More	1,127	11.87%

Table 2.4.74: City of Oakwood Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	3,864	100%
Occupied Housing Units	3,610	93.43%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	254	6.57%

Table 2.4.75: City of Oakwood Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	3,610	-
Average Household Size	2.63	--
Households with People Under 18 Years	1,448	40.11%
Households with People 65+ Years	830	23.00%
Householder Living Alone 65+ Years	357	9.90%
No Vehicle Available	96	2.66%
With a Broadband Internet Subscription	3,514	97.34%

Table 2.4.76: City of Oakwood Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	9,496	100%
White	8,692	91.53%
Black or African American	38	0.40%
American Indian or Alaska Native	0	0.00%
Asian	291	3.06%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	315	3.32%
Hispanic or Latino (of any race)	160	1.68%

Table 2.4.77: City of Oakwood Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	9,058	100%
English only	8,582	94.74%
Spanish	73	0.81%
Other Indo-European languages	138	1.52%
Asian and Pacific Island languages	250	2.76%
Other languages	15	0.17%

Table 2.4.78: City of Oakwood Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.30%
\$10,000 to \$14,999	4.20%
\$15,000 to \$24,999	2.70%
\$25,000 to \$34,999	2.20%
\$35,000 to \$49,999	5.80%
\$50,000 to \$74,999	9.20%
\$75,000 to \$99,999	10.40%
\$100,000 to \$149,999	16.60%
\$150,000 to \$199,999	18.40%
\$200,000 or more	29.10%
Median Household Income	\$132,722
Mean Household Income	\$179,717

City of Riverside

Tables 2.4.79 to 2.4.84 summarize the City of Riverside’s population, housing statistics, and income statistics. There are 10,820 households of which 21.78 percent have at least one member under 18 years of age, and 26.70 percent have members 65 years and over. The largest percentage of households (20.20 percent) had an income between \$50,000 to \$74,999; approximately 5.20 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Riverside was the White (non-Hispanic) group, which makes up 80.65 percent of the population. Black or African American is the second largest race (7.05 percent). Approximately 2.34 percent of the city’s population speak Spanish at home. In addition, 1.57 percent speak another Indo-European language, 2.28 percent speak an Asian and Pacific Island language, and 0.46 percent speak another language.

Table 2.4.79: City of Riverside Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	24,482	100%
Under 18 Years	5,664	23.14%
18 to 24 Years	2,377	9.71%
25 to 34 Years	4,291	17.53%
35 to 44 Years	2,723	11.12%
45 to 54 Years	2,360	9.64%
55 to 64 Years	3,361	13.73%
65 Years and More	3,706	15.14%

Table 2.4.80: City of Riverside Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	11,821	100%
Occupied Housing Units	10,820	91.53%
Housing Units - Mobile Homes	225	2.08%
Vacant Housing Units	1,001	8.47%

Table 2.4.81: City of Riverside Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	10,820	-
Average Household Size	2.26	-
Households with People Under 18 Years	2,357	21.78%
Households with People 65+ Years	2,889	26.70%
Householder Living Alone 65+ Years	1,169	10.80%
No Vehicle Available	575	5.31%
With a Broadband Internet Subscription	9,717	89.81%

Table 2.4.82: City of Riverside Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	24,482	100%
White	19,744	80.65%
Black or African American	1,726	7.05%
American Indian or Alaska Native	5	0.02%
Asian	696	2.84%
Native Hawaiian or Other Pacific Islander	17	0.07%
Some Other Race (One Race)	152	0.62%
Two or More Races	1,278	5.22%
Hispanic or Latino (of any race)	864	3.53%

Table 2.4.83: City of Riverside Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	22,734	100%
English only	21,221	93.34%
Spanish	533	2.34%
Other Indo-European languages	358	1.57%
Asian and Pacific Island languages	518	2.28%
Other languages	104	0.46%

Table 2.4.84: City of Riverside Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	5.20%
\$10,000 to \$14,999	4.80%
\$15,000 to \$24,999	9.30%
\$25,000 to \$34,999	8.60%
\$35,000 to \$49,999	14.50%
\$50,000 to \$74,999	20.20%
\$75,000 to \$99,999	15.70%
\$100,000 to \$149,999	14.60%
\$150,000 to \$199,999	4.00%
\$200,000 or more	3.10%
Median Household Income	\$56,232
Mean Household Income	\$69,614

***City of Springboro (The majority of this jurisdiction lies in Warren County)**

Tables 2.4.85 to 2.4.90 summarize the City of Springboro’s population, housing statistics, and income statistics. There are 6,750 households of which 39.35 percent have at least one member under 18 years of age, and 29.40 percent have members 65 years and over. The largest percentage of households (25.10 percent) had an income between \$100,000 to \$149,999; approximately 2.90 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Springboro was the White (non-Hispanic) group, which makes up 89.78 percent of the population. Two or More Races is the second largest race (3.35 percent). Approximately 0.66 percent of the city’s population speak Spanish at home. In addition, 1.64 percent speak another Indo-European language and 1.09 percent speak an Asian and Pacific Island language.

Table 2.4.85: City of Springboro Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	19,218	100%
Under 18 Years	5,368	27.93%
18 to 24 Years	1,394	7.25%
25 to 34 Years	1,959	10.19%
35 to 44 Years	2,551	13.27%
45 to 54 Years	2,791	14.52%
55 to 64 Years	1,987	10.34%
65 Years and More	3,168	16.48%

Table 2.4.86: City of Springboro Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	7,015	100%
Occupied Housing Units	6,750	96.22%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	265	3.78%

Table 2.4.87: City of Springboro Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	6,750	-
Average Household Size	2.83	-
Households with People Under 18 Years	2,656	39.35%
Households with People 65+ Years	1,985	29.40%
Householder Living Alone 65+ Years	567	8.40%
No Vehicle Available	101	1.50%
With a Broadband Internet Subscription	6,492	96.18%

Table 2.4.88: City of Springboro Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	19,218	100%
White	17,253	89.78%
Black or African American	256	1.33%
American Indian or Alaska Native	5	0.03%
Asian	464	2.41%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	45	0.23%
Two or More Races	643	3.35%
Hispanic or Latino (of any race)	552	2.87%

Table 2.4.89: City of Springboro Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	17,813	100%
English only	17,208	96.60%
Spanish	118	0.66%
Other Indo-European languages	292	1.64%
Asian and Pacific Island languages	195	1.09%
Other languages	0	0.00%

Table 2.4.90: City of Springboro Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	2.90%
\$10,000 to \$14,999	0.70%
\$15,000 to \$24,999	1.80%
\$25,000 to \$34,999	3.50%
\$35,000 to \$49,999	5.00%
\$50,000 to \$74,999	16.80%
\$75,000 to \$99,999	13.50%
\$100,000 to \$149,999	25.10%
\$150,000 to \$199,999	12.80%
\$200,000 or more	17.90%
Median Household Income	\$113,182
Mean Household Income	\$130,569

City of Trotwood

Tables 2.4.91 to 2.4.96 summarize the City of Trotwood’s population, housing statistics, and income statistics. There are 10,233 households of which 19.38 percent have at least one member under 18 years of age, and 37.50 percent have members 65 years and over. The largest percentage of households (18.00 percent) had an income between \$35,000 to \$49,999; approximately 7.60 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Trotwood was the Black or African American (non-Hispanic) group, which makes up 64.89 percent of the population. White is the second largest race (27.94 percent). Approximately 1.08 percent of the city’s population speak Spanish at home. In addition, 1.76 percent speak another Indo-European language, 0.13 percent speak an Asian and Pacific Island language, and 1.25 percent speak another language.

Table 2.4.91: City of Trotwood Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	23,125	100%
Under 18 Years	4,756	20.57%
18 to 24 Years	1,891	8.18%
25 to 34 Years	2,263	9.79%
35 to 44 Years	2,878	12.45%
45 to 54 Years	3,020	13.06%
55 to 64 Years	3,210	13.88%
65 Years and More	5,107	22.08%

Table 2.4.92: City of Trotwood Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	11,780	100%
Occupied Housing Units	10,233	86.87%
Housing Units - Mobile Homes	185	1.81%
Vacant Housing Units	1,547	13.13%

Table 2.4.93: City of Trotwood Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	10,233	-
Average Household Size	2.20	-
Households with People Under 18 Years	1,983	19.38%
Households with People 65+ Years	3,837	37.50%
Householder Living Alone 65+ Years	2,128	20.80%
No Vehicle Available	1,202	11.75%
With a Broadband Internet Subscription	8,645	84.48%

Table 2.4.94: City of Trotwood Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	23,125	100%
White	6,462	27.94%
Black or African American	15,006	64.89%
American Indian or Alaska Native	4	0.02%
Asian	35	0.15%
Native Hawaiian or Other Pacific Islander	24	0.10%
Some Other Race (One Race)	46	0.20%
Two or More Races	1,132	4.90%
Hispanic or Latino (of any race)	416	1.80%

Table 2.4.95: City of Trotwood Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	22,096	100%
English only	21,164	95.78%
Spanish	238	1.08%
Other Indo-European languages	388	1.76%
Asian and Pacific Island languages	29	0.13%
Other languages	277	1.25%

Table 2.4.96: City of Trotwood Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	7.60%
\$10,000 to \$14,999	9.50%
\$15,000 to \$24,999	8.20%
\$25,000 to \$34,999	10.80%
\$35,000 to \$49,999	18.00%
\$50,000 to \$74,999	17.70%
\$75,000 to \$99,999	10.50%
\$100,000 to \$149,999	13.70%
\$150,000 to \$199,999	2.30%
\$200,000 or more	1.70%
Median Household Income	\$46,442
Mean Household Income	\$59,982

City of Union

Tables 2.4.97 to 2.4.102 summarize the City of Union’s population, housing statistics, and income statistics. There are 2,725 households of which 31.71 percent have at least one member under 18 years of age, and 40.10 percent have members 65 years and over. The largest percentage of households (26.10 percent) had an income between \$50,000 to \$74,999; approximately 1.20 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Union was the White (non-Hispanic) group, which makes up 90.91 percent of the population. Two or More Races is the second largest race (5.08 percent). Approximately 0.58 percent of the city’s population speak Spanish at home. In addition, 0.44 percent speak another Indo-European language.

Table 2.4.97: City of Union Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	6,894	100%
Under 18 Years	1,786	25.91%
18 to 24 Years	337	4.89%
25 to 34 Years	846	12.27%
35 to 44 Years	984	14.27%
45 to 54 Years	769	11.15%
55 to 64 Years	698	10.12%
65 Years and More	1,474	21.38%

Table 2.4.98: City of Union Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	2,952	100%
Occupied Housing Units	2,725	92.31%
Housing Units - Mobile Homes	44	1.61%
Vacant Housing Units	227	7.69%

Table 2.4.99: City of Union Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	2,725	
Average Household Size	2.53	
Households with People Under 18 Years	864	31.71%
Households with People 65+ Years	1,093	40.10%
Householder Living Alone 65+ Years	496	18.20%
No Vehicle Available	8	0.29%
With a Broadband Internet Subscription	2,405	88.26%

Table 2.4.100: City of Union Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	6,894	100%
White	6,267	90.91%
Black or African American	223	3.23%
American Indian or Alaska Native	0	0.00%
Asian	0	0.00%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	350	5.08%
Hispanic or Latino (of any race)	54	0.78%

Table 2.4.101: City of Union Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	6,602	100%
English only	6,535	98.99%
Spanish	38	0.58%
Other Indo-European languages	29	0.44%
Asian and Pacific Island languages	0	0.00%
Other languages	0	0.00%

Table 2.4.102: City of Union Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.20%
\$10,000 to \$14,999	3.00%
\$15,000 to \$24,999	2.70%
\$25,000 to \$34,999	11.20%
\$35,000 to \$49,999	11.90%
\$50,000 to \$74,999	26.10%
\$75,000 to \$99,999	16.50%
\$100,000 to \$149,999	18.30%
\$150,000 to \$199,999	5.30%
\$200,000 or more	3.90%
Median Household Income	\$68,586
Mean Household Income	\$80,480

City of Vandalia

Tables 2.4.103 to 2.4.108 summarize the City of Vandalia’s population, housing statistics, and income statistics. There are 6,434 households of which 24.62 percent have at least one member under 18 years of age, and 29.70 percent have members 65 years and over. The largest percentage of households (19.60 percent) had an income between \$50,000 to \$74,999; approximately 1.90 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of Vandalia was the White (non-Hispanic) group, which makes up 88.33 percent of the population. Black or African American is the second largest race (5.12 percent). Approximately 0.20 percent of the city’s population speak Spanish at home. In addition, 0.52 percent speak another Indo-European language, 1.07 percent speak an Asian and Pacific Island language, and 0.32 percent speak another language.

Table 2.4.103: City of Vandalia Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	15,139	100%
Under 18 Years	3,429	22.65%
18 to 24 Years	1,316	8.69%
25 to 34 Years	1,809	11.95%
35 to 44 Years	1,837	12.13%
45 to 54 Years	2,134	14.10%
55 to 64 Years	2,039	13.47%
65 Years and More	2,575	17.01%

Table 2.4.104: City of Vandalia Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	6,640	100%
Occupied Housing Units	6,434	96.90%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	206	3.10%

Table 2.4.105: City of Vandalia Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	6,434	-
Average Household Size	2.33	-
Households with People Under 18 Years	1,584	24.62%
Households with People 65+ Years	1,911	29.70%
Householder Living Alone 65+ Years	856	13.30%
No Vehicle Available	253	3.93%
With a broadband Internet subscription	5,830	90.61%

Table 2.4.106: City of Vandalia Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	15,139	100%
White	13,373	88.33%
Black or African American	775	5.12%
American Indian or Alaska Native	10	0.07%
Asian	185	1.22%
Native Hawaiian or Pacific Islander	0	0.00%
Some Other Race (One Race)	47	0.31%
Two or More Races	550	3.63%
Hispanic or Latino (of any race)	199	1.31%

Table 2.4.107: City of Vandalia Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	14,138	100%
English only	13,841	97.90%
Spanish	28	0.20%
Other Indo-European languages	73	0.52%
Asian and Pacific Island languages	151	1.07%
Other languages	45	0.32%

Table 2.4.108: City of Vandalia Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.90%
\$10,000 to \$14,999	2.00%
\$15,000 to \$24,999	7.30%
\$25,000 to \$34,999	8.00%
\$35,000 to \$49,999	11.70%
\$50,000 to \$74,999	19.60%
\$75,000 to \$99,999	17.90%
\$100,000 to \$149,999	14.10%
\$150,000 to \$199,999	11.20%
\$200,000 or more	6.30%
Median Household Income	\$73,171
Mean Household Income	\$91,730

City of West Carrollton

Tables 2.4.109 to 2.4.114 summarize the City of West Carrollton’s population, housing statistics, and income statistics. There are 6,071 households of which 23.06 percent have at least one member under 18 years of age, and 29.60 percent have members 65 years and over. The largest percentage of households (20.90 percent) had an income between \$50,000 to \$74,999; approximately 4.70 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the City of West Carrollton was the White (non-Hispanic) group, which makes up 75.89 percent of the population. Black or African American is the second largest race (14.32 percent). Approximately 2.39 percent of the city’s population speak Spanish at home. In addition, 0.35 percent speak another Indo-European language, 0.83 percent speak an Asian and Pacific Island language, and 0.30 percent speak another language.

Table 2.4.109: City of West Carrollton Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	13,060	100%
Under 18 Years	2,770	21.21%
18 to 24 Years	1,275	9.76%
25 to 34 Years	1,806	13.83%
35 to 44 Years	2,143	16.41%
45 to 54 Years	1,380	10.57%
55 to 64 Years	1,372	10.51%
65 Years and More	2,314	17.72%

Table 2.4.110: City of West Carrollton Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	6,516	100%
Occupied Housing Units	6,071	93.17%
Housing Units - Mobile Homes	245	4.04%
Vacant Housing Units	445	6.83%

Table 2.4.111: City of West Carrollton Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	6,071	-
Average Household Size	2.13	-
Households with People Under 18 Years	1,400	23.06%
Households with People 65+ Years	1,797	29.60%
Householder Living Alone 65+ Years	947	15.60%
No Vehicle Available	308	5.07%
With a Broadband Internet Subscription	5,385	88.70%

Table 2.4.112: City of West Carrollton Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	13,060	100%
White	9,911	75.89%
Black or African American	1,870	14.32%
American Indian or Alaska Native	6	0.05%
Asian	165	1.26%
Native Hawaiian or Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	593	4.54%
Hispanic or Latino (of any race)	515	3.94%

Table 2.4.113: City of West Carrollton Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	12,362	100%
English only	11,885	96.14%
Spanish	295	2.39%
Other Indo-European languages	43	0.35%
Asian and Pacific Island languages	102	0.83%
Other languages	37	0.30%

Table 2.4.114: City of West Carrollton Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	4.70%
\$10,000 to \$14,999	4.30%
\$15,000 to \$24,999	11.60%
\$25,000 to \$34,999	7.80%
\$35,000 to \$49,999	15.50%
\$50,000 to \$74,999	20.90%
\$75,000 to \$99,999	14.50%
\$100,000 to \$149,999	13.20%
\$150,000 to \$199,999	2.60%
\$200,000 or more	4.90%
Median Household Income	\$54,861
Mean Household Income	\$69,010

Village of Farmersville

Tables 2.4.115 to 2.4.120 summarize the Village of Farmersville’s population, housing statistics, and income statistics. There are 357 households of which 39.22 percent have at least one member under 18 years of age, and 31.90 percent have members 65 years and over. The largest percentage of households (27.50 percent) had an income between \$50,000 to \$74,999; approximately 2.80 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the Village of Farmersville was the White (non-Hispanic) group, which makes up 99.41 percent of the population. Some Other Race is the second largest race (.29 percent).

Table 2.4.115: Village of Farmersville Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	1,022	100%
Under 18 Years	314	30.72%
18 to 24 Years	69	6.75%
25 to 34 Years	143	13.99%
35 to 44 Years	104	10.18%
45 to 54 Years	126	12.33%
55 to 64 Years	99	9.69%
65 Years and More	167	16.34%

Table 2.4.116: Village of Farmersville Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	366	100%
Occupied Housing Units	357	97.54%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	9	2.46%

Table 2.4.117: Village of Farmersville Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	357	-
Average Household Size	2.86	-
Households with People Under 18 Years	140	39.22%
Households with People 65+ Years	114	31.90%
Householder Living Alone 65+ Years	26	7.30%
No Vehicle Available	4	1.12%
With a Broadband Internet Subscription	344	96.36%

Table 2.4.118: Village of Farmersville Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	1,022	100%
White	1,016	99.41%
Black or African American	0	0.00%
American Indian or Alaska Native	0	0.00%
Asian	0	0.00%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	3	0.29%
Two or More Races	3	0.29%
Hispanic or Latino (of any race)	0	0.00%

Table 2.4.119: Village of Farmersville Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	974	99.80%
English only	0	0.00%
Spanish	0	0.00%
Other Indo-European languages	2	0.20%
Asian and Pacific Island languages	0	0.00%
Other languages	976	100%

Table 2.4.120: Village of Farmersville Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	2.80%
\$10,000 to \$14,999	2.00%
\$15,000 to \$24,999	2.50%
\$25,000 to \$34,999	3.60%
\$35,000 to \$49,999	14.00%
\$50,000 to \$74,999	27.50%
\$75,000 to \$99,999	22.40%
\$100,000 to \$149,999	19.30%
\$150,000 to \$199,999	3.10%
\$200,000 or more	2.80%
Median Household Income	\$71,979
Mean Household Income	\$84,758

Village of New Lebanon

Tables 2.4.121 to 2.4.126 summarize the Village of New Lebanon’s population, housing statistics, and income statistics. There are 1,504 households of which 29.59 percent have at least one member under 18 years of age, and 36.80 percent have members 65 years and over. The largest percentage of households (23.10 percent) had an income between \$50,000 to \$74,999; approximately 0.70 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the Village of New Lebanon was the White (non-Hispanic) group, which makes up 94.24 percent of the population. Two or more races is the second largest race (3.51 percent). Approximately 0.55 percent of the village’s population speak Spanish at home. In addition, 0.50 percent speak an Asian and Pacific Island language.

Table 2.4.121: Village of New Lebanon Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	4,131	100%
Under 18 Years	1,201	29.07%
18 to 24 Years	486	11.76%
25 to 34 Years	463	11.21%
35 to 44 Years	411	9.95%
45 to 54 Years	413	10.00%
55 to 64 Years	282	6.83%
65 Years and More	875	21.18%

Table 2.4.122: Village of New Lebanon Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	1,563	100%
Occupied Housing Units	1,504	96.23%
Housing Units - Mobile Homes	21	1.40%
Vacant Housing Units	59	3.77%

Table 2.4.123: Village of New Lebanon Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	1,504	-
Average Household Size	2.68	-
Households with People Under 18 Years	445	29.59%
Households with People 65+ Years	553	36.80%
Householder Living Alone 65+ Years	224	14.90%
No Vehicle Available	90	5.98%
With a Broadband Internet Subscription	1,376	91.49%

Table 2.4.124: Village of New Lebanon Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	4,131	100%
White	3,893	94.24%
Black or African American	54	1.31%
American Indian or Alaska Native	0	0.00%
Asian	39	0.94%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	145	3.51%
Hispanic or Latino (of any race)	0	0.00%

Table 2.4.125: Village of New Lebanon Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	3,806	100%
English only	3,766	98.95%
Spanish	21	0.55%
Other Indo-European languages	0	0.00%
Asian and Pacific Island languages	19	0.50%
Other languages	0	0.00%

Table 2.4.126: Village of New Lebanon Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	0.70%
\$10,000 to \$14,999	7.60%
\$15,000 to \$24,999	13.0%
\$25,000 to \$34,999	10.20%
\$35,000 to \$49,999	8.50%
\$50,000 to \$74,999	23.10%
\$75,000 to \$99,999	21.30%
\$100,000 to \$149,999	9.20%
\$150,000 to \$199,999	6.40%
\$200,000 or more	0%
Median Household Income	\$59,365
Mean Household Income	\$64,646

Village of Phillipsburg

Tables 2.4.127 to 2.4.132 summarize the Village of Phillipsburg’s population, housing statistics, and income statistics. There are 178 households of which 31.46 percent have at least one member under 18 years of age, and 23.60 percent have members 65 years and over. The largest percentage of households (23.60 percent) had an income between \$75,000 to \$99,999; approximately 8.40 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the Village of Phillipsburg was the White (non-Hispanic) group, which makes up 94.97 percent of the population. Hispanic or Latino (of any race) is the second largest race (4.77 percent). Approximately 1.92 percent of the city’s population speak Spanish at home.

Table 2.4.127: Village of Phillipsburg Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	398	100%
Under 18 Years	109	27.39%
18 to 24 Years	27	6.78%
25 to 34 Years	66	16.58%
35 to 44 Years	48	12.06%
45 to 54 Years	45	11.31%
55 to 64 Years	45	11.31%
65 Years and More	58	14.57%

Table 2.4.128: Village of Phillipsburg Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	238	100%
Occupied Housing Units	178	74.79%
Housing Units - Mobile Homes	0	0.00%
Vacant Housing Units	60	25.21%

Table 2.4.129: Village of Phillipsburg Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	178	-
Average Household Size	2.24	-
Households with People Under 18 Years	56	31.46%
Households with People 65+ Years	42	23.60%
Householder Living Alone 65+ Years	21	11.80%
No Vehicle Available	11	6.18%
With a Broadband Internet Subscription	160	89.89%

Table 2.4.130: Village of Phillipsburg Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	398	100%
White	378	94.97%
Black or African American	0	0.00%
American Indian or Alaska Native	0	0.00%
Asian	0	0.00%
Native Hawaiian or Other Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	1	0.25%
Hispanic or Latino (of any race)	19	4.77%

Table 2.4.131: Village of Phillipsburg Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	364	100%
English only	357	98.08%
Spanish	7	1.92%
Other Indo-European languages	0	0.00%
Asian and Pacific Island languages	0	0.00%
Other languages	0	0.00%

Table 2.4.132: Village of Phillipsburg Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	8.40%
\$10,000 to \$14,999	3.40%
\$15,000 to \$24,999	7.30%
\$25,000 to \$34,999	15.70%
\$35,000 to \$49,999	14.00%
\$50,000 to \$74,999	11.80%
\$75,000 to \$99,999	23.60%
\$100,000 to \$149,999	11.80%
\$150,000 to \$199,999	2.80%
\$200,000 or more	1.10%
Median Household Income	\$56,250
Mean Household Income	\$62,525

***Village of Verona (The majority of this jurisdiction lies in Preble County)**

Tables 2.4.133 to 2.4.138 summarize the Village of Verona’s population, housing statistics, and income statistics. There are 240 households of which 16.67 percent have at least one member under 18 years of age, and 23.80 percent have members 65 years and over. The largest percentage of households (29.60 percent) had an income between \$50,000 to \$74,999; approximately 1.70 percent of households had an annual income of less than \$10,000. In 2022, the largest racial group in the Village of Verona was the White (non-Hispanic) group, which makes up 96.67 percent of the population. Two or More Races is the second largest race (1.74 percent).

Table 2.4.133: Village of Verona Population by Age 2022 ACS 5-Year Estimates

Age	Number	Percentage
Total Population	631	100%
Under 18 Years	114	18.07%
18 to 24 Years	76	12.04%
25 to 34 Years	101	16.01%
35 to 44 Years	63	9.98%
45 to 54 Years	73	11.57%
55 to 64 Years	117	18.54%
65 Years and More	87	13.79%

Table 2.4.134: Village of Verona Housing Statistics 2022 ACS 5-Year Estimates

Housing Statistics	Number	Percentage
Total Housing Units	263	100%
Occupied Housing Units	240	91.25%
Housing Units - Mobile Homes	2	0.83%
Vacant Housing Units	23	8.75%

Table 2.4.135: Village of Verona Household Statistics 2022 ACS 5-Year Estimates

Household Statistics	Number	Percentage
Total Households	240	-
Average Household Size	2.63	-
Households with People Under 18 Years	40	16.67%
Households with People 65+ Years	57	23.80%
Householder Living Alone 65+ Years	14	5.80%
No Vehicle Available	5	2.08%
With a Broadband Internet Subscription	228	95.00%

Table 2.4.136: Village of Verona Race and Ethnicity Statistics 2022 ACS 5-Year Estimates

Race and Ethnicity	Number	Percentage
Total Population	631	100%
White	610	96.67%
Black or African American	0	0.00%
American Indian or Alaska Native	1	0.16%
Asian	0	0.00%
Native Hawaiian or Pacific Islander	0	0.00%
Some Other Race (One Race)	0	0.00%
Two or More Races	11	1.74%
Hispanic or Latino (of any race)	9	1.43%

Table 2.4.137: Village of Verona Language Spoken at Home Statistics 2022 ACS 5-Year Estimates

Language Statistics	Number	Percentage
Total Population (over 5 years old)	609	100%
English only	609	100.00%
Spanish	0	0.00%
Other Indo-European languages	0	0.00%
Asian and Pacific Island languages	0	0.00%
Other languages	0	0.00%

Table 2.4.138: Village of Verona Income Statistics 2022 ACS 5-Year Estimates

Household Income Statistics	Percentage of Households
Less than \$10,000	1.70%
\$10,000 to \$14,999	0.80%
\$15,000 to \$24,999	5.40%
\$25,000 to \$34,999	5.00%
\$35,000 to \$49,999	18.30%
\$50,000 to \$74,999	29.60%
\$75,000 to \$99,999	10.00%
\$100,000 to \$149,999	27.90%
\$150,000 to \$199,999	1.30%
\$200,000 or more	0.00%
Median Household Income	\$59,813
Mean Household Income	\$73,357

3 | Planning Process

3.1 Methodology

The Planning Process chapter describes the steps involved in the development of the 2024 Montgomery County Natural Hazard Mitigation Plan, including details about who participated, how community involvement was organized and promoted throughout the community, what hazards were included in the Plan and why, as well as how stakeholder involvement played a critical role in the planning process. This chapter also explains how the Core Planning Committee was formed and how member feedback contributed to the updating of the County’s Hazard Mitigation Plan.

3.2 Existing Plans & Regulations

Montgomery County and the State of Ohio maintain several plans and tools that were pertinent to reference in the development of the 2024 Montgomery County Natural Hazard Mitigation Plan, including:

- 2019 Montgomery County Natural Hazard Mitigation Plan
- 2024 State of Ohio Hazard Mitigation Plan (SOHMP)
- Montgomery County Subdivision Regulations
- Zoning Regulations for all Townships

3.3 Montgomery County Authority to Adopt Plan

The Montgomery County Board of County Commissioners are elected at large for four-year terms. The board members are the budgeting, appropriating, taxing, and purchasing authority. The Montgomery County Planning Commission was established by the Montgomery County Board of County Commissioners in conformance with Section 713.21 of the Ohio Revised Code. The authority to adopt plans comes from statutory law and from Chapter 307 of the Ohio Revised Code. **Table 3.3.1** lists the existing authorities and regulations in place in Montgomery County and its municipalities. The County and all jurisdictions have the staff and authority to implement the mitigation actions found in this plan. The County and all jurisdictions have the capabilities to grow their capacities in completing/implementing the mitigations actions in **Table 5.2.1**.

Every Village in Montgomery County has a planning commission or a zoning board that deals with development and growth issues in their jurisdiction, referencing regulations, development plans, and mitigation strategies as they make decisions. These jurisdictions are small and have limited full-time staff, so the County as an organization provides strong leadership and oversight of economic development, community development, and land use planning. Smaller jurisdictions, such as Villages, while maintaining an extent of a public-works budget, may be more financially and/or administratively limited than larger jurisdictions.

Table 3.3.1: Existing Authorities and Regulations in Montgomery County’s Municipalities

Community	Planning Commission	Comprehensive Plan	Floodplain Regulation	Building Codes*	Zoning Codes	Capital Budget	Public Works Budget
Montgomery County	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only



2024 Montgomery County Natural Hazard Mitigation Plan

Community	Planning Commission	Comprehensive Plan	Floodplain Regulation	Building Codes*	Zoning Codes	Capital Budget	Public Works Budget
City of Brookville	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Centerville	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Clayton	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Dayton	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Englewood	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Germantown	Yes	No	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Huber Heights	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Kettering	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Miamisburg	Yes	No	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Moraine	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only

Community	Planning Commission	Comprehensive Plan	Floodplain Regulation	Building Codes*	Zoning Codes	Capital Budget	Public Works Budget
City of Oakwood	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Riverside	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Trotwood	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Union	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of Vandalia	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
City of West Carrollton	Yes	Yes	Yes	Yes	Yes	Yes	Limited in-kind wages only
Village of Farmersville	Yes	No	Yes	Yes	Yes	Yes	Limited in-kind wages only
Village of New Lebanon	Yes	No	Yes	Yes	Yes	Yes	Limited in-kind wages only
Village of Phillipsburg	No	No	Yes	Yes	Yes	Yes	Limited in-kind wages only
Washington Township	Yes	Yes	No	Yes	Yes	Yes	Limited in-kind wages only

Community	Planning Commission	Comprehensive Plan	Floodplain Regulation	Building Codes*	Zoning Codes	Capital Budget	Public Works Budget
Miami Conservancy District	Yes	No	Yes	No	No	Yes	Limited in-kind wages only

* All jurisdictions within the state now follow the State Building Code (Ohio Administrative Code 4101:1)

3.4 Notification Process

Core Planning Committee members were invited to participate at the beginning of the planning process through a Kickoff Meeting announcement. Prior to each additional meeting, members of the Core Planning Committee were invited to participate via email notification. Representatives from the following entities were invited to participate in the planning process. Additionally, **Table 3.4.1** lists the participating jurisdictions and representatives and how they participated.

Montgomery County

- Montgomery County Auditor
- Montgomery County OEM
- Montgomery County Business Services - Building Regulation
- Montgomery County Engineer's Office
- Montgomery County Facilities Management
- Montgomery County Sheriff's Office
- Montgomery Soil & Water Conservation District

City and Village Members

- City of Brookville
- City of Centerville
- City of Clayton
- City of Dayton
- City of Englewood
- City of Germantown
- City of Huber Heights
- City of Kettering
- City of Miamisburg
- City of Moraine
- City of Oakwood
- City of Riverside
- City of Trotwood
- City of Union
- City of Vandalia
- City of West Carrollton
- Village of Farmersville
- Village of New Lebanon
- Village of Phillipsburg

Township Members

- Butler Township
- Clay Township
- German Township
- Harrison Township
- Jackson Township
- Jefferson Township
- Miami Township
- Perry Township
- Washington Township

Local Schools and Universities

- Sinclair Community College
- University of Dayton

Other Organizations

- AES Ohio
- Alcohol, Addiction, and Mental Health Services (ADAHMS)
- Area Agency on Aging
- CenterPoint Energy
- Downtown Dayton Partnership
- Five Rivers Metro Parks
- Greater Dayton Area Hospital Association (GDAHA)
- Miami Valley Conservancy District
- Miami Valley Regional Planning Committee (MVRPC)
- Spectrum

Table 3.4.1: Participating Jurisdictions

Community/Organization	Surveys Completed			Meetings Attended			Representatives
	Goals & Hazard Priorities	Previous Mitigation Actions	New Mitigation Actions	1	2	Other	
<i>County</i>							
Montgomery County Building Official	√						Anthony Wenzler, Building Official
Montgomery County OEM	√	√	√	√	√	√	Nedra Havens, EMA Deputy Director;
Montgomery County Engineer's Office	√	√		√			Paul Gruner, Montgomery County Engineer
Montgomery County Facilities Management	√						Mike Gorman, Assistant Director
Public Health Dayton and Montgomery County	√	√	√	√	√	√	Larry Clark, EPM
<i>Jurisdictions</i>							
City of Brookville	√	√	√		√	√	Jack Kuntz, City Manager
City of Centerville	√	√	√	√	√	√	Brandon Barnett, Miami Valley Fire District
City of Clayton	√	√	√			√	Brian Garner, Clayton Fire Department
City of Dayton	√	√	√			√	Nick Hosford, Dayton Fire Department

Community/Organization	Surveys Completed			Meetings Attended			Representatives
	Goals & Hazard Priorities	Previous Mitigation Actions	New Mitigation Actions	1	2	Other	
City of Englewood	✓	✓	✓		✓	✓	Anthony Terrace, Englewood Fire Department
City of Germantown	✓	✓	✓			✓	Chip Wirrig, Germantown Service Manager
City of Huber Heights	✓	✓	✓	✓		✓	Keith Kinsley, Huber Heights Fire Department
City of Kettering	✓	✓	✓		✓	✓	Mitch Robbins, Kettering Fire Department
City of Miamisburg	✓	✓	✓		✓	✓	Brandon Barnett, Miami Valley Fire District
City of Moraine	✓	✓	✓			✓	Traci Kuzminski, Moraine Fire Department
City of Oakwood	✓	✓	✓	✓			Allen Hill, Oakwood Public Safety
City of Riverside	✓	✓	✓	✓	✓		Marker Miller, Riverside Fire Department
City of Trotwood	✓	✓	✓		✓	✓	Rick Haacke, Trotwood Fire Department



Community/Organization	Surveys Completed			Meetings Attended			Representatives
	Goals & Hazard Priorities	Previous Mitigation Actions	New Mitigation Actions	1	2	Other	
City of Union	✓	✓	✓			✓	John Applegate, City Manager
City of Vandalia		✓	✓			✓	Chad Follick, Vandalia Fire Department
City of West Carrollton	✓	✓	✓			✓	Chris Barnett, West Carrollton Fire Department
Village of Farmersville	✓	✓	✓			✓	Jeff Erisman, Farmersville Fire Department
Village of New Lebanon	✓	✓	✓			✓	J.C. Keyser, New Lebanon Fire Department
Village of Phillipsburg	✓	✓	✓			✓	Justin Saunders, Phillipsburg Fire Department
<i>Other</i>							
Butler Township	✓		✓			✓	Steve Stein, Butler Township Fire Department
Clay Township	✓	✓	✓			✓	Jack Kuntz, City Manager
German Township	✓	✓	✓			✓	Chip Wirrig, Germantown Service Manager

Community/Organization	Surveys Completed			Meetings Attended			Representatives
	Goals & Hazard Priorities	Previous Mitigation Actions	New Mitigation Actions	1	2	Other	
Jackson Township	√	√	√			√	Jeff Erisman, Farmersville Fire Department
Jefferson Township					√		Oscar Young, Township Trustee
Miami Township		√	√	√		√	Brandon Barnett, Miami Valley Fire District
Perry Township			√				J.C. Keyser, New Lebanon Fire Department
Washington Township		√				√	Nicholas Bergman, Washington Township Fire Department
Miami Conservancy District	√	√	√		√	√	Barry Puskas, Chief, Technical and Engineering Services; Jess Moyer, Engineering Associate
Sinclair Community College	√					√	Maria Ryan, Transfer Specialist

*If representatives were unable to attend the virtual Core Planning Committee meetings, they participated via “Other” formats, including online surveys, as documented in **Appendix G**.

3.5 Meetings

The following section details the meetings that took place during the planning process. Documentation of each meeting, including newspaper postings, email announcements and attachments, meeting materials, and completed surveys, can be found in **Appendix G**.

Core Planning Committee Kick-off

A Kickoff Announcement was emailed to stakeholders on February 26, 2024, inviting them to participate in the 2019 Montgomery County Natural Hazard Mitigation Plan update process as part of the Core Planning Committee. All kickoff materials were made available on the project's website (<http://www.burtonplanning.com/Montgomery-hmp>).

The Announcement outlined the following details regarding the planning process:

- Goals of the Hazard Mitigation Plan
- A summary of who is involved in the planning process
- Federal requirements of the hazard mitigation planning process
- An overview of the hazard mitigation planning process
- The proposed schedule for the Montgomery County Plan update
- The role of the Core Planning Committee in the update process
- Contact information for both Montgomery County OEM and Burton Planning Services
- Dates, times, and Microsoft Teams links of upcoming Core Planning and Public Meetings

Core Planning and Public Meeting 1

The first meetings were open to both the core planning members and the public. They were held both virtually and in-person on Monday, March 25, 2024, at 1:00 P.M and at 5:00 P.M at the Dayton Metro Library – Southeast Branch (Belmont's) Community Room B. The meetings began with a brief introduction from a Burton Planning Services (BPS) representative. This introduction included a description of the in-person and virtual engagement process, including multiple options for participants to sign into the meeting. Participants that attended virtually were reminded multiple times throughout the course of the meeting to sign in using the online survey, via the chat function, or by sending an email to the County EMA or BPS. Participants that attended in-person used the sign-in sheets for attendance. The introduction also informed attendees that they could ask questions using the chat feature, or by unmuting themselves and asking their questions at any time throughout the meeting.

A BPS representative then guided the attendees through a presentation which detailed the hazard mitigation planning process, including requirements of the planning process, potential hazards that could be addressed, benefits of hazard mitigation planning, and potential types of projects that could be federally funded because of the hazard mitigation plan. BPS also described the role that the Core Planning Committee would serve in developing the updates to the 2019 Montgomery County Natural Hazard Mitigation Plan.

A total of 14 people attended the afternoon meeting, including the Montgomery County OEM Director and Deputy Director, and Emergency Operations Officer. Representatives from the City of Centerville, City of Huber Heights, City of Oakwood, City of Riverside, Miami Township, Montgomery County Engineer's Office, Public Health - Dayton & Montgomery County, and CenterPoint Energy were in attendance. No members of the public attended the meeting.

No one attended the evening meeting. Two representatives from BPS and the Montgomery County OEM Director remained on the meeting link for the duration of the one-hour meeting to ensure anyone who joined would have the opportunity to participate.

Following the completion of the presentation, a BPS representative guided the attendees through three surveys, detailed below. The participants were provided with multiple methods of completing the surveys, including a physical hard copy of the surveys, a fillable PDF that could be completed on their computer, or an online version. Links to survey locations were provided throughout the meeting. Public input was requested using social media.

Goals Survey

The purpose of this survey was to reflect on the goals included in the 2019 Montgomery County Natural Hazard Mitigation Plan to determine if they were still relevant to the 2024 Plan. Each attendee reviewed the previous goals and determined if they were still applicable, provided comments or edits to the goals that needed changed, and generated new goals to potentially be included in the Plan.

Discussion on the Goals Survey centered around the relevance of the goals. Attendees indicated a preference for adding a goal related to water treatment and water delivery systems. Other attendees mentioned the relevance of invasive species to the Plan.

Hazard Priority Survey

The purpose of this survey was to review all hazards that were included in the 2019 Montgomery County Natural Hazard Mitigation Plan and prioritize them. As such, attendees were asked to rate each hazard on a scale of zero to five, with five meaning the hazard poses the greatest possible threat to the County or their community and zero meaning the hazard should not be included in the 2024 Plan. Attendees rated hazards that were included in the 2019 Montgomery County Natural Hazard Mitigation Plan, as well as all potential hazards that could be included in the 2024 Plan.

Following the completion of this survey, BPS guided a discussion on which hazards were deemed to be most important and which hazards attendees did not think needed to be included. As mentioned above, attendees emphasized invasive species during this part of the meeting.

Previous Mitigation Actions Status Survey

The purpose of the Previous Mitigation Actions Status Survey was to have attendees review the mitigation actions that were included in the 2019 Montgomery County Natural Hazard Mitigation Plan, reflect on the status of each action, and determine if that action should be included in the 2024 Hazard Mitigation Plan.

Core Planning and Public Meeting 2

The second set of meetings were open to both the core planning members and the public. They were held both virtually and in-person on Monday, April 29, 2024, at 10:00 A.M and at 5:00 P.M at the Dayton Metro Library – Southeast Branch (Belmont’s) Community Room B. The meetings began with a brief introduction from a Burton Planning Services (BPS) representative. This introduction included a description of the in-person and virtual engagement process, including multiple options for participants to sign into the meeting. Participants that attended virtually were reminded multiple times throughout the course of the meeting to sign in using the online survey, via the chat function, or by sending an email to the County EMA or BPS. Participants that attended in-person used the sign-in sheets for attendance. The introduction also informed attendees that they could ask questions using the chat feature, or by unmuting themselves and asking their questions at any time throughout the meeting.

A BPS representative then guided the attendees through a presentation which detailed the hazard mitigation planning process, including requirements of the planning process, potential hazards that could be addressed, benefits of hazard mitigation planning, and potential types of projects that could be federally funded because of the hazard mitigation plan. BPS also described the role that the Core Planning Committee would serve in the development of the 2024 Montgomery County Natural Hazard Mitigation Plan.

A total of 17 people attended the morning planning meeting, including the Montgomery County OEM Director and Deputy Director. Representatives of the City of Brookville, City of Centerville, City of Englewood, City of Kettering, City of Miamisburg, City of Riverside, City of Trotwood, Miami Conservancy District, Public Health - Dayton & Montgomery County, and CenterPoint Energy were in attendance. No members of the public attended the meeting.

One representative from Jefferson Township attended the evening public meeting. No members of the public attended the evening public meeting. Two representatives from BPS and the Director of the Montgomery County OEM remained on the meeting link for the duration of the one-hour meeting to ensure anyone who joined would have the opportunity to participate.

Following the completion of the presentation, a BPS representative guided the attendees through three surveys, detailed below. Each participant was provided with multiple methods of completing the survey, including a physical hard copy of the survey, a fillable PDF that could be completed on their computer, or an online version. Links to survey locations were provided throughout the meeting. Public input was requested using social media.

Hazard Mitigation Action Scoring Matrix

The purpose of this survey was to reflect on the hazard mitigation actions included in the 2019 Montgomery County Natural Hazard Mitigation Plan to determine if they were still relevant to the 2024 Plan. New mitigation actions were developed for the 2024 Montgomery County Natural Hazard Mitigation Plan, and these actions were presented to the Core Planning Committee. Participants were asked to score the actions based on their priority for their jurisdiction. Participants were also told that the wording for the mitigation actions may be altered to better align with the needs of their communities. The remainder of the meeting functioned as a working session, where participants were able to ask questions as they completed their surveys. Once complete, the meeting was concluded.

3.6 Public Comment Period

The 2024 Montgomery Natural Hazard Mitigation Plan was made available to the public and Core Planning Committee for review for a 15-day public comment period on September 18, 2024. The public comment period was extended through November 2, 2024. Comments were received prior to the public comment period from the Core Planning Committee. The Natural Hazard Mitigation Plan was made available for review online on the project's website, Montgomery County's website, and a social media post. No comments from the public were received. The comments received from the Core Planning Committee were addressed. Montgomery County's efforts to include the public and core planning members can be found in **Appendix G**.

4 | Risk Assessments

4.1 Dam/Levee Failure

Description

FEMA defines a dam as “. Any artificial barrier, including appurtenant works, which impounds or diverts water, and which (1) is 25 feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse, to the maximum water storage elevation or (2) has an impounding capacity at maximum water storage elevation of 50 acre-feet or more.” Dam failure occurs when that impounded water is suddenly released in an uncontrollable manner. A dam/levee failure can result in the uncontrolled release of floodwater downstream of a facility, resulting in a flood wave that can cause significant damage to buildings and infrastructure downstream. The unexpected nature of dam collapse also increases the likelihood of loss of life in the impacted area due to reduced warning times.

Dam infrastructure can be affected by natural hazards, such as floods; man-made threats, such as sabotage; and an imbalance between a dam's age and number of resources invested towards dam maintenance, such as dam settlement and cracking, or movement of the dam's foundation. Dam failures can be caused by seepage, structural failure, or water overtopping the reservoir. A majority of dams in the U.S. are privately owned but regulated by the State or Federal government.

The National Flood Insurance Program (NFIP) defines a levee as “a man-made structure, usually an earthen embankment, designed and constructed in accordance with the sound engineering practice to contain, control, or divert the flow of water so as to reduce risk from temporary flooding.” Levees are built parallel to waterways in order to reduce the risk of flood damage to neighboring infrastructure. Levee failure can occur from improper maintenance, erosion, seepage, subsidence, and when the man-made structure fails.

Common dam-related terms include:

- **Spillway:** A structure that is part of a dam or found beside a dam which allows the controlled release of water from a reservoir.
- **Outlet works:** Used to regulate or release water flow from a dam. An outlet works is a device which consists of one or more pipes or tunnels which move water through the dam.
- **Auxiliary spillway:** Also known as an emergency spillway, the auxiliary spillway is a secondary spillway only designed to operate during periods of increased water inflow or high reservoir levels.
- **Structural failure:** Caused by foundation defects such as settlement and slope instability or earthquakes.
- **Mechanical failure:** Dam failure due to malfunctioning gates, conduits, or valves.
- **Hydraulic failure:** Occurs when water overtops the dam, usually caused by inadequate spillway design, blockages in spillways, or dam crest settlement.
- **Levee System:** A flood protection system which consists of a levee or other structures, such as closure or drainage devices.

Normally, water passes through a dam via the main spillway or outlet works. During periods of increased water inflow or high reservoir levels, water should pass through an auxiliary spillway. Dam failure or partial failures are typically caused by structural, mechanical, or hydraulic failures, rather than during extreme storm events.

According to the U.S. Army Corps of Engineers (USACE), dams can be classified by their hazard potential. The three hazard potential classes are:

- **High Hazard Potential:** During the event of a dam failure loss of life is probable, which is the primary attribute for assigning this designation to a dam. Economic losses, environmental damages, and lifeline impacts are also likely, but are not required for this designation.
- **Significant Hazard Potential:** No loss of life is expected during a dam failure, but economic losses, environmental damages, and lifeline impacts are likely.
- **Low Hazard Potential:** No loss of life is expected during a dam failure and no lifeline impacts are expected. Environmental damages and economic losses are expected to be limited to the dam owner’s property.

Location

Dam properties of High to Low hazard potential are listed in **Table 4.1.1**. The status of each dam’s Emergency Action Plan as of June 1, 2024, is indicated in the table (Source: USACE). Dam locations can be seen in **Figure 4.1.2**.

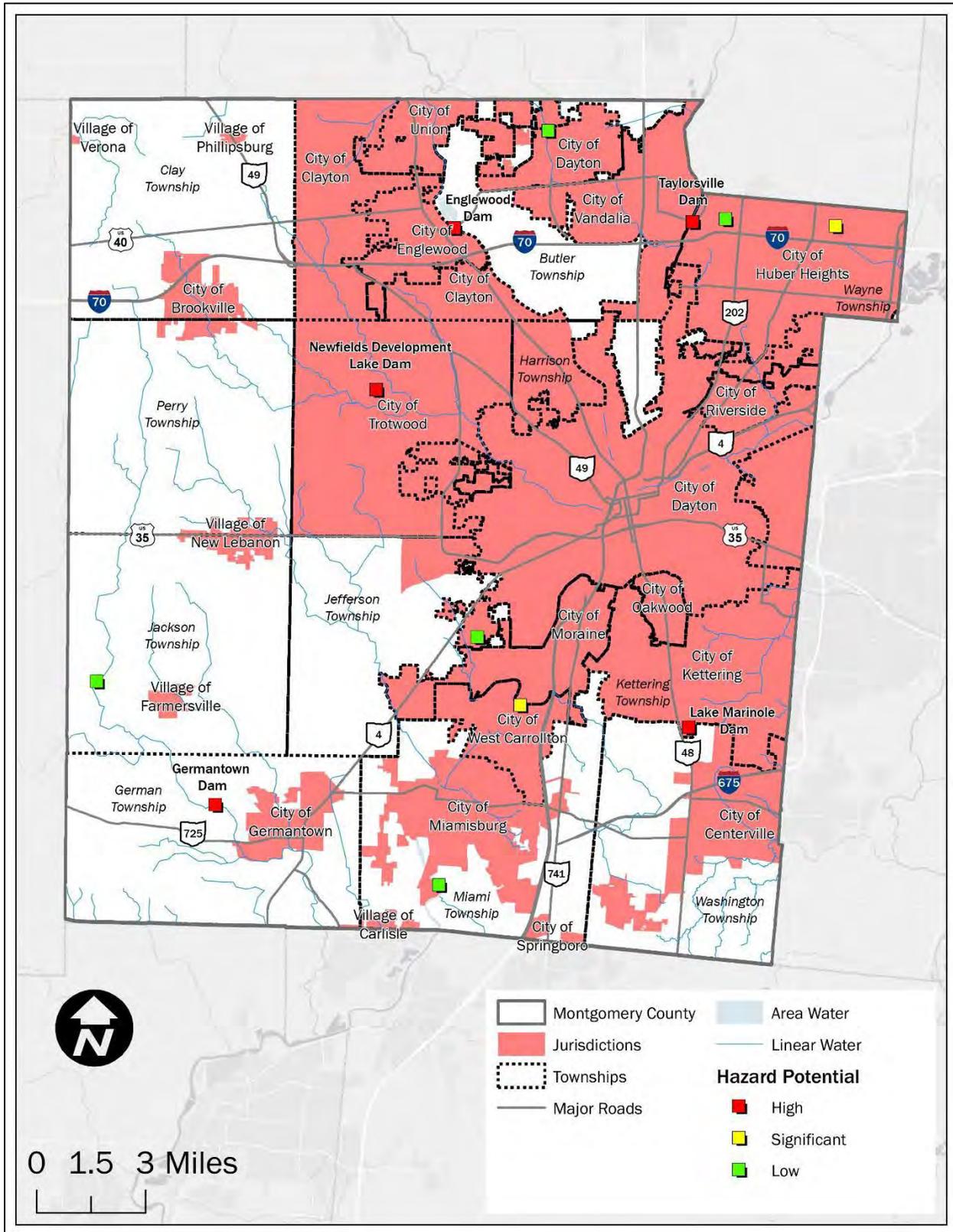
Table 4.1.1: Dam Properties in Montgomery County, Ohio

Hazard Potential Classification	Dam Name	Owner Types	Distance to Nearest City (Miles)	Primary Dam Type	Condition Assessment	EAP Prepared
High	Englewood Dam	Local Government	1.5	Earth	Fair	Yes
High	Germantown Dam	Local Government	1.8	Earth	Fair	Yes
High	Taylorville Dam	Local Government	0.6	Earth	Fair	Yes
High	Newfields Development Lake Dam	Local Government	1.3	Earth	Fair	Yes
High	Lake Marinole Dam	Private	1.3	Earth	Satisfactory	Yes
Significant	South Montgomery County Low Dam	Local Government	1.3	Concrete	Satisfactory	Yes
Significant	Carriage Hill Reserve Lake Dam	Local Government	7.8	Earth	Satisfactory	Yes
Low	Lake of The Woods Dam	Private	6.3	Earth	Unknown	No
Low	Hutchings Station Dam	Public Utility	0.8	Concrete	Satisfactory	Yes
Low	Possum Creek Reserve Lake Dam	Local Government	2.7	Earth	Satisfactory	Yes
Low	Northpark Center Retention Dam	Local Government	3.5	Concrete	Fair	Yes

Hazard Potential Classification	Dam Name	Owner Types	Distance to Nearest City (Miles)	Primary Dam Type	Condition Assessment	EAP Prepared
Low	Dayton Airport Detention Pond Dam	Local Government	2.4	Earth	Satisfactory	No

Source: U.S. Army Corps of Engineers

Figure 4.1.2: Dam Locations in Montgomery County, Ohio



Extent

The Hazard Priority dam classification system considers the effects of dam failure or mismanagement during both normal and flood flow conditions, as well as worst-case-scenario situations. Dam classification may decrease with physical modifications to the dam or by eliminating downstream infrastructure. The classifications are justifiable, reasonable, and consistent with the federal guidelines for dam safety. The hazard potential classification may change depending on anticipated consequences of a dam failure, such as new development below a dam or within the dam breach floodplain. Hazard potential classification may decrease with physical modifications to the dam or by eliminating downstream infrastructure.

Sudden failure of High Hazard dams could result in one of the following outcomes, depending on environmental conditions.

- Loss of human life.
- All items listed below for failure of Significant Hazard potential dams.

Sudden failures of Significant Hazard dams could result in at least one of the following conditions:

- Disruption of a public water supply or wastewater treatment facility, release of health hazardous industrial or commercial waste, or other health hazards.
- Flooding of residential, commercial, industrial, or publicly owned structures.
- Flooding of high-value property.
- Damage or disruption to major roads including, but not limited to, interstate and state highways and the only access to residential or other critical areas such as hospitals, nursing homes, or correction facilities as determined by the chief.
- Damage or disruption to railroads or public utilities.
- Damage to downstream dams or levees. Damage to dams or levees can include, but is not limited to, overtopping of the structure. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potential affected property.
- Damage or disruption to local roads including, but not limited to, roads not otherwise listed as major roads.
- Damage to agricultural crops and livestock.

Sudden failures of Low Hazard dams could result in property losses restricted mainly to the dam and rural lands, and the loss of human life is not probable.

History

None of the dams listed in **Table 4.1.1** have experienced any known failure or near-failure.

Probability

Dam failures are unlikely but not impossible. All dams, especially High and Significant hazard potential dams, should have an Emergency Action Plan (EAP) in place. In addition, aging dam infrastructure coupled with climate change could result in more frequent dam failures. The Climate Change section in Future Trends discusses climate change further.

Dam conditions can provide insight into how likely it is that a dam will fail. The U.S. Army Corps of Engineers defines dam conditions as follows:

Satisfactory

No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the minimum applicable state or federal regulatory criteria or tolerable risk guidelines.

- No existing deficiencies or potentially unsafe conditions are recognized, with the exception of minor operational and maintenance items that require attention.
- Safe performance is expected under all loading conditions including the design earthquake and design flood.
- Permanent risk reduction measures (reservoir restrictions, spillway modifications, operating procedures, etc.) have been implemented to eliminate identified deficiencies.

Fair

No existing dam safety deficiencies are recognized for normal operating conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action. Note: Rare or extreme events are defined by the regulatory agency based on their minimum applicable state or federal criteria.

- Lack of maintenance requires attention to prevent developing safety concerns.
- Maintenance conditions may exist that require remedial action greater than routine work and/or secondary studies or investigations.
- Interim or permanent risk reduction measures may be under consideration.

Poor

A dam safety deficiency is recognized for normal operating conditions which may realistically occur. Remedial action is necessary. 'Poor' may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Investigations and studies are necessary.

- Dam has multiple deficiencies or a significant deficiency that requires remedial work.
- Lack of maintenance (erosion, sinkholes, settlement, cracking, unwanted vegetation, animal burrows, inoperable outlet gates) has affected the integrity or the operation of the dam under normal operational conditions and requires remedial action to resolve.
- Critical design information is needed to evaluate the potential performance of the dam. For example, a field observation or a review of the dam's performance history has identified a question that can only be answered by review of the design and construction history for the dam. Uncertainty arises when there is no design and/or construction documentation available for review and additional analysis is needed to better understand the risk associated with operation under normal operational conditions.
- Interim or permanent risk reduction measures may be under consideration.

Unsatisfactory

A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

- A critical component of the dam has deteriorated to unacceptable condition or failed.
- A safety inspection indicates major structural distress (excessive uncontrolled seepage, cracks, slides, sinkholes, severe deterioration, etc.), advanced deterioration, or operational deficiencies which could lead to failure of the dam or its appurtenant structures under normal operating conditions.

- Reservoir restrictions or other interim risk reduction measures are required.
- A partial or complete reservoir drawdown may be mandated by the state or federal regulatory agency.

Englewood Dam

Englewood Dam is located about 1.5 miles from the City of Englewood. Its current condition is assessed as Fair and there is a prepared EAP. According to the Miami Conservancy District, Englewood Dam was completed in 1921. The City of Englewood's wastewater treatment facility is located downstream from the dam.

Germantown Dam

Germantown Dam is located about 1.8 miles from the City of Germantown. Its current condition is assessed as Fair and there is a prepared EAP. The dam was completed in 1920, along with four other dams, for the purpose of flood control. Germantown Dam's inundation area covers 3,520 acres. The inundation area follows Twin Creek for 14 miles and would impact parts of neighboring Preble County.

Taylorville Dam

Taylorville dam is located about 0.6 miles from the City of Dayton. Its current condition is assessed as Fair and there is a prepared EAP. The dam was completed in 1921. The dam inundation area covers 11,000 acres and would cover 14 miles towards the City of Troy in Miami County.

Newfields Development Lake Dam

Newfields Development Lake Dam was completed in 1973 for recreational purposes. Its current condition is assessed as Fair and there is a prepared EAP.

Lake Marinole Dam

Lake Marinole Dam was completed in 1966 for recreational purposes. Its current condition is assessed as Fair and there is a prepared EAP.

Vulnerability Assessment

Infrastructure Impact

Failures of High and Significant hazard potential dams could flood roadways, including major routes and local roads. Utility infrastructure (wastewater, drinking water, and commercial and industrial waste lines) may be disrupted or destroyed.

Population Impact

The local population could be impacted by loss of utilities, including the local water supply. Health hazards may also be released into the flood waters during a dam failure which may cause indirect harm to the local population. The local population could be impacted economically as well.

For social vulnerability, in the National Risk Index, "riverine flooding" had a score of 20.42 ("Relatively High"). People that are most vulnerable to flooding are those who live within the 100-year floodplain in structures that are not elevated about the base flood elevation. The index indicates an expected annual loss of \$7.3 million due to flood events with 1.5 events occurring per year.

Property Damage

At least one residential or commercial property is likely to face structural collapse during a High or Significant hazard potential dam failure. Dam failure has the potential to damage high value properties. Residential, commercial, industrial, and/or high value properties may be damaged by a significant hazard potential dam failure, as well as publicly owned properties. Properties that are owned by the dam owner may be exempt from the property damage calculation.

Loss of Life

Loss of life is likely during a high hazard potential dam failure. Loss of life during a Significant or Low hazard potential dam failure is not expected.

Economic Losses

Economic losses can include damage from flooding crops, flooding livestock, damaged goods, and the flooding of vital roadways.

Emergency Action Plans (EAPs) have been completed for all High hazard potential dams in the County (**Table 4.1.1**); however, the data is subjected to agreements where it cannot be published publicly. The Ohio Department of Natural Resources (ODNR) holds a record of these EAPs.

Future Trends

Land Use and Development Trends

Development that has occurred in areas that will flood after a dam failure should be prepared for rapid flooding. Land use plans can limit development in these areas to prevent the increase of dam hazard potential. To better understand where development should be limited, dam failure inundation maps should be completed for as many dams as possible. If new residential construction units are within the inundation/breach areas of dams, it would increase property and population vulnerabilities despite county-wide population loss.

The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164,000. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with dam failures.

Climate Change

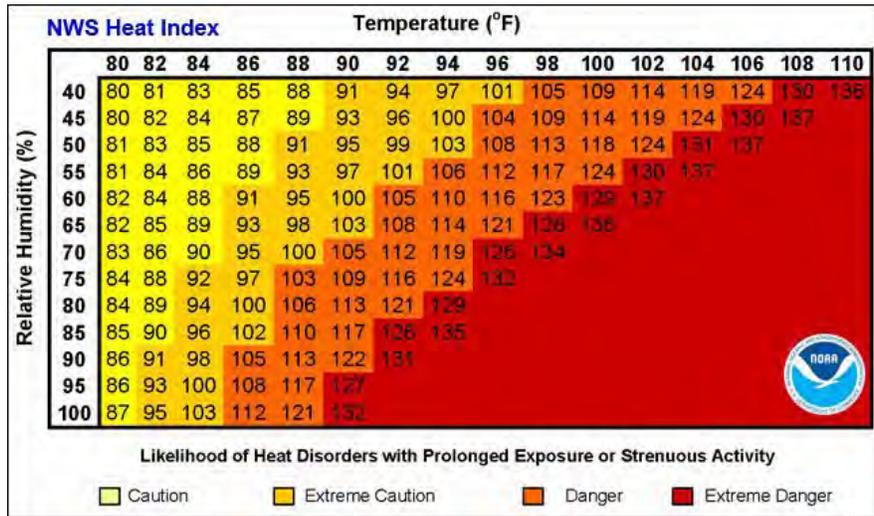
Climate change may increase the frequency and/or the severity of the impacts from a dam failure event. Climate change is having an uneven effect on precipitation (rain and snow) in the U.S. – some areas are experiencing increased precipitation and flooding, while others suffer from drought. If Montgomery County experiences effects of climate change related to heavy rainfall, more frequent and severe flooding could occur, which could lead to or be caused by dam failure. Aging dam infrastructure coupled with climate change could result in more frequent dam failures. According to the 2018 National Climate Assessment, dams and levees can fail after moderate or extreme rainfall. If Montgomery County experiences the effects of climate change related to more frequent droughts, dams and levees can be compromised as a result of the ground cracking due to drying, reduced soil strength, erosion, and subsidence. As drought or precipitation frequency and intensity increase with climate change, the probability and severity of dam failure may increase as well, especially if this infrastructure is not maintained, upgraded, or, if necessary, redesigned.

4.2 Drought and Extreme Heat

Description

According to the Federal Emergency Management Agency (FEMA), extreme heat is a period of high heat and humidity with temperatures above 90 degrees for at least two to three days. In extreme heat the human body works extra hard to maintain a normal temperature, which can lead to death. Extreme heat is responsible for the highest number of annual deaths among all weather-related hazards. Humid conditions, which add to the discomfort of high temperatures, occur when a high-pressure weather system traps hazy, moist air near the ground. Extreme heat may also contribute to the formation of a drought if moisture and precipitation are lacking. The National Weather Service’s Heat Index Chart is provided in **Figure 4.2.1**.

Figure 4.2.1: Heat Index Chart



Source: National Weather Service

Extreme heat events are often accompanied by drought conditions when the events are prolonged. A drought is a shortage in precipitation over an extended period of time. Droughts are common throughout all climatic zones and can range in length from a couple of weeks to multiple years or decades in some areas. In 2012, Montgomery County experienced its longest drought, which lasted 34 weeks.

According to the National Oceanic and Atmospheric Administration (NOAA), there are three common types of droughts: Meteorological, Agricultural, and Hydrological. Meteorological drought severity is calculated by the amount of the rainfall deficit (compared to annual averages) and the length of the dry period. Agricultural drought is based on the effects to agriculture by factors such as rainfall and soil water deficits or diminished groundwater/reservoir levels needed for irrigation. Hydrological drought is based on the effects of rainfall shortages on the water supply, such as stream flow, reservoir and lake levels, and groundwater table decline.

Location

Drought is a countywide hazard that can affect all locations and jurisdictions in Montgomery County. More specifically, these hazards typically occur at a regional scale. Droughts most commonly occur in Ohio from spring through autumn; however, they may occur at any time throughout the year.

Extent

Due to the regional nature of droughts and extreme heat events, effects may be noticed throughout the County in both the urbanized and rural areas. All jurisdictions within the County may be affected in a single drought event. In Montgomery County, droughts are often linked to prolonged periods of above average temperatures and little to no precipitation.

Initial effects of drought can be noticed within a short period, as soil may dry out and plants may wither and die. When drought conditions persist over several weeks, months, or years, effects may be more pronounced with reductions in water levels of wells, lakes, reservoirs, streams, and rivers. Water supply issues for agriculture, commercial/industrial activities, and private consumption may arise if drought conditions persist over a long term.

The extent of the drought is determined by the Palmer Drought Severity Index (PDSI), shown below in **Table 4.2.2**. In this way, the Index can be utilized as a tool to help define disaster areas and indicate the availability of irrigation water supplies, reservoir levels, range conditions, amount of stock water, and potential for forest fires. The Palmer Drought Severity Index depicts prolonged (in months or years) abnormal dryness or wetness and is slow to respond, changing little from week to week. It also reflects long-term moisture runoff, recharge, and deep percolation, as well as evapotranspiration.

Table 4.2.2: Palmer Drought Severity Index Classifications and Federal Drought Categories

Palmer Drought Severity Index	Category	Description
-1.0 to -1.9	D0	Abnormally Dry
-2.0 to -2.9	D1	Moderate Drought
-3.0 to -3.9	D2	Severe Drought
-4.0 to -4.9	D3	Extreme Drought
-5.0 or less	D4	Exceptional Drought

The Palmer Drought Severity Index is a standardized index with values typically falling between -4.0 and +4.0, although extreme conditions can be greater in value (includes federal drought categories). Negative values indicate drought conditions while positive values represent wet conditions. Values around zero represent near normal conditions.

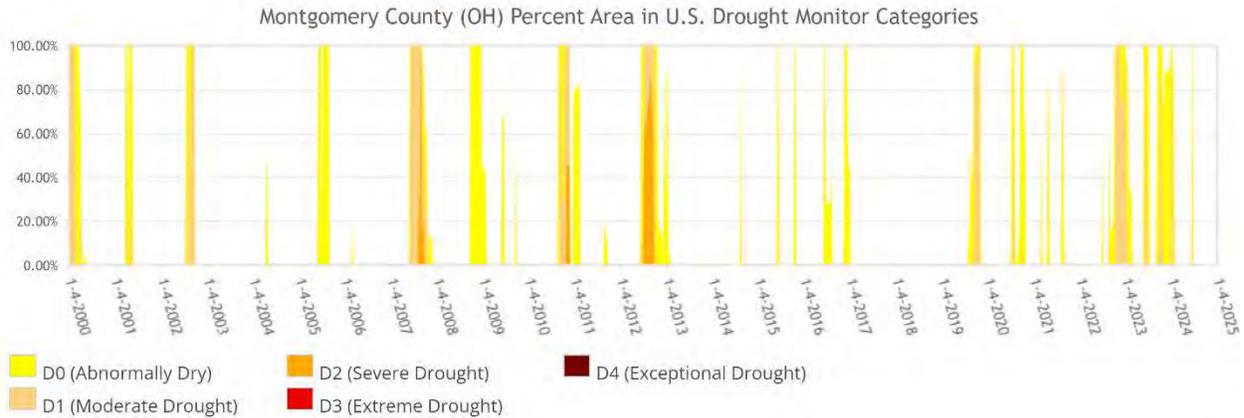
Abnormally dry (D0) and moderate drought (D1) conditions occur frequently and typically do not adversely affect agricultural activities unless conditions are sustained in nature. Severe and extreme drought (D2 and D3, respectively) conditions begin to impact agricultural crops, leading to potential economic losses. These more severe events also may impact drinking water resources, especially if the source is a lake or reservoir. Sustained severe droughts may alter the ability of the soil to absorb water, leading to potential flash flooding when rainfall resumes.

History

Drought

U.S. Drought Monitor (USDM) describes severe drought as a time when crops suffer, the numbers of wildfires are high and the soil is dry, cracked and pulling away from foundations. In an extreme drought, yields are minimal, livestock are stressed, and lawns go dormant. Data shows that Montgomery County has spent 261 weeks in abnormally dry conditions, 98 weeks in moderate drought, 23 weeks in severe drought, and zero weeks in extreme or exceptional drought since 2000. **Figure 4.2.3** depicts the drought monitor history for Montgomery from 2000 through February 2024. The most extensive periods of moderate drought specific to Montgomery County are provided in **Table 4.2.4** (Source: U.S. Drought Monitor).

Figure 4.2.3: Drought in Montgomery County from 2000 to 2024



From the U.S. Drought Monitor website, <https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>, 7-1-2024



D0 = Abnormally Dry, D1 = Moderate Drought, D2 = Severe Drought, D3 = Extreme Drought, D4= Exceptional Drought

Source: U.S. Drought Monitor

Table 4.2.4: Periods of Moderate Drought in Montgomery County, Ohio, 2000-2023

Start Date	End Date	# of Consecutive Weeks
9/26/2023	10/24/2023	5
6/6/2023	6/13/2023	2
10/18/2022	1/17/2023	14
10/6/2020	10/13/2020	2
7/21/2020	7/28/2020	2
9/10/2019	10/29/2019	8
6/19/2012	10/2/2012	16
9/14/2010	11/23/2010	11
6/5/2007	10/16/2007	20
8/6/2002	9/24/2002	8
5/8/2001	5/15/2001	2
1/4/2000	2/22/2000	8

Source: U.S. Drought Monitor

Severe Drought

There have been three severe drought events in Montgomery County since January 1, 2020.

- **Severe Drought (D2), July 2012 – September 2012:**
 - Starting in June 2012, 100 percent of Montgomery County was experiencing abnormally dry conditions with small parts of the county in moderate drought. Beginning in July 2012, 49 percent of the county entered severe drought, which increased to 89 percent by late August. Severe drought conditions continued until early October 2012.
- **Severe Drought (D2), November 2010:**
 - In September 2010, 100% of Montgomery County experienced abnormally dry conditions with fluctuating moderate drought throughout September and October. In early November 2010, 45 percent of the county entered a severe drought that persisted through the end of November.
- **Severe Drought (D2), August 2007– September 2007:**
 - Starting in June 2007, 100 percent of Montgomery County was experiencing abnormally dry and moderate drought conditions. In mid-August, conditions worsened, and 40 percent of Montgomery County entered a severe drought. Conditions lessened slightly the following week, but then persisted until early September when 100% of the county entered a severe drought. By the end of September, only 22% of the county remained in severe drought. A moderate drought and abnormally dry conditions persisted through October 2007.

Extreme Heat

There have been three heat events and three excessive heat events in Montgomery County since January 1, 1995. All events are listed individually in **Appendix A**.

- **Excessive Heat Event, July 19 through 21, 2019:**
 - High temperatures in the 90's across Montgomery County and the Dayton metropolitan area combined with high relative humidity created heat index values in excess of 100 degrees for a third day in a row.
- **Heat Event, July 1 through July 7, 2012:**
 - Ongoing daily heat continued into early July across southwestern Ohio. Although heat indices were not as high as late June, heat indices in the area generally ranged from 90 to 100 degrees Fahrenheit each day through July 7.
- **Heat Event, June 28 through June 30, 2012:**
 - Many locations across southwestern Ohio experienced heat indices over 100 degrees Fahrenheit on June 28 and 29. On June 30, heat indices generally rose to 90 to 95 degrees, which was compounded by widespread power outages in the area.
- **Excessive Heat Event, August 23 and 24, 2007:**
 - Oppressively hot and humid conditions with heat indices near 105 degrees impacted the Cincinnati and Dayton metro areas August 22 through August 24.
- **Excessive Heat Event, August 6 through 10, 2007:**
 - Oppressively hot and humid conditions with heat indices near 105 degrees impacted southern Ohio August 7 through August 10.

- **Heat Event, July 20 through July 31, 1999:**
- The last part of July was very hot and humid across the state with temperatures reaching the 90's on most days and above 100 for a few days. The dewpoints and overnight lows were in the 70's through much of the period. The excessive heat contributed to ten deaths in the Cincinnati metro area and three in the Dayton metro area.

Probability

Montgomery County has experienced droughts in the past, and the potential exists for the County to experience droughts in the future. Montgomery County has had 15 drought events since 2000. Montgomery County has a 98 percent chance of having a drought and/or experiencing abnormally dry conditions each year based on historical data. Montgomery County had six heat events between 1995 and 2023. Montgomery County has a 21 percent chance of having a heat event each year based on historical data.

Seasons of drought and extreme heat have the potential to occur during any particular year when necessary, conditions are met, and according to the Midwest Chapter of the Fourth National Climate Assessment, the frequency of major heat waves in the Midwest has increased over the last six decades. In addition, it is predicted that as the climate gets warmer, there will be an associated increase in the number and severity of summer droughts and extreme heat events. The Climate Change section in Future Trends discusses climate change further.

Vulnerability Assessment

Drought projections suggest that some regions of the U.S. will become drier and that most will have more extreme variations in precipitation. Even if current drought patterns remain unchanged, warmer temperatures will amplify drought effects. Drought and warmer temperatures may increase risks of large-scale insect outbreaks and wildfires, in addition to accelerating tree and shrub death and changing habitats and ecosystems in favor of drought-tolerant species. Forest and rangeland managers can mitigate some of these impacts and build resiliency in forests through appropriate management actions.

Infrastructure Impact

Drought does not have a significant impact on infrastructure or structures. The greatest impacts of drought are on agricultural interests, as crops may fail, and livestock may not have sufficient water resources.

Population Impact

Extreme heat can have an impact on the population of the entire County. Groups who live in areas with minimal tree cover or urban areas may experience higher temperatures relative to outlying areas due to the urban heat island effects. Groups that are particularly vulnerable to extreme heat, such as older adults and people with chronic health conditions may experience illness or injury, such as heat cramps, heat exhaustion, and heat stroke.

For social vulnerability, the FEMA National Risk Index does not have a rating for drought, but it does have a rating for "Heat Wave" for a score of 87.5 ("relatively moderate"). The index indicates an expected annual loss of \$816,000 due to heat wave events with 2.6 events occurring per year.

Property Damage

During extreme heat events, utility failure may occur due to overuse of electricity for cooling. Property damage is a possibility due to extreme heat. Vehicles are at risk of breaking down from excessive heat, as heat can reduce battery life and reduce the efficiency of the cooling system resulting in overheated engines. Extreme heat can also cause a home to dry out and prematurely age. Excessive heat in combination with lack of rainfall (drought) can cause soil to shrink and crack, which puts stress on a

home’s foundation that can be costly to fix. Drought and warmer temperatures may increase risks of large-scale insect outbreaks and wildfires. Drought and warmer temperatures may also accelerate tree and shrub death, changing habitats and ecosystems in favor of drought-tolerant species. FEMA’s National Risk Index identifies the potential economic loss, specifically expected annual loss for buildings, and expected annual loss (EALP) for population equivalence, associated with Montgomery County for a Heat Wave event, as recorded in **Table 4.2.5** below.

Table 4.2.5: Structure and Population Vulnerability from Heat Wave

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040406	\$58	\$168	\$11,828	\$12,054
150100	\$2,057	\$104	\$8,988	\$11,149
010200	\$0	\$103	\$10,878	\$10,981
140100	\$2,158	\$100	\$8,651	\$10,908
165000	\$577	\$98	\$10,048	\$10,723
130102	\$744	\$112	\$9,710	\$10,566
020400	\$0	\$94	\$10,079	\$10,174
050504	\$30	\$100	\$9,735	\$9,865
090304	\$12	\$76	\$9,753	\$9,841
125000	\$148	\$60	\$9,574	\$9,782
100101	\$68	\$91	\$9,452	\$9,611
050503	\$5	\$109	\$9,443	\$9,557
090302	\$12	\$97	\$9,372	\$9,482
050600	\$1,441	\$93	\$7,929	\$9,463
125102	\$16	\$89	\$9,344	\$9,449
040405	\$0	\$93	\$9,356	\$9,449
080500	\$0	\$73	\$9,226	\$9,300
050106	\$48	\$87	\$9,051	\$9,186
100102	\$1	\$86	\$8,732	\$8,819
080100	\$0	\$88	\$8,674	\$8,762
Total	\$7,374	\$1,922	\$189,824	\$199,120

Source: FEMA National Risk Index

Loss of Life

Loss of life is possible during drought and extreme heat events, especially for young children, the elderly, and individuals with respiratory conditions.

Economic Losses

Economic losses are a threat from extreme heat and droughts to Montgomery County. Crops and livestock may be compromised during prolonged extreme heat events. Human productivity can also be affected when working conditions become too hot. According to the 2022 Census of Agriculture developed by the U.S. Department of Agriculture (USDA), top crop items based on acreage for Montgomery County include soybeans for beans, corn for grain, wheat for grain, forage-land used for all hay and haylage, and corn for silage/greenchop (animal feed). Based on data from the U.S. Department of Agriculture, Montgomery County’s crop yields were not impacted from previous drought events. However, census data was collected for 2017 and 2022 which are two years with zero to minimal drought events for Montgomery County. Acreage farmed for Corn, Hay & Haylage, and Soybeans increased, while acreage for Wheat decreased between 2017 and 2022. Yield per acre increased in 2022 versus 2017 with an average of about four bushels per acre for Corn, Soybeans, and Wheat. Yield per acre decreased for Hay & Haylage by two percent (**Figure 4.2.6**). Agricultural land use can be seen on the land use map in Chapter 1 (**Figure 1.2.1**).

Table 4.2.6: Montgomery County Crop Yields 2017 - 2022

Commodity	2017		2022	
	Acres	Crop Yield	Acres	Crop Yield
Corn, Grain	35,568	5,915,748 bushels	39,369	6,796,369 bushels
Hay & Haylage	4,181	9,804 tons	6,418	14,950 tons
Soybeans	44,635	2,246,008 bushels	49,994	2,608,479 bushels
Wheat	1,410	109,670 bushels	2,178	176,544 bushels

Source: United States Department of Agriculture Census

Future Trends

Land Use and Development Trends

Drought and extreme heat are most likely to impact agriculture land uses and land uses that house or serve vulnerable populations, such as schools, daycares, hospitals, and nursing homes. Less people can mean generally less people vulnerable to extreme heat/drought events. However, the increase of people age 65+ from 2017 (9,664) to 2022 (10,326) could mean more vulnerability to Extreme Heat for that population group. Increase of agricultural land use, crop yields, and livestock cash receipts can mean more vulnerability to drought in those areas.

The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with droughts.

Climate Change

Climate change may increase the frequency and/or the severity of the impacts from drought and extreme heat events. As the climate gets warmer, there will be an associated increase in the number and severity of droughts and extreme heat events. Warmer global temperatures may be associated with a prolonged growing season, but this trend may also increase the risk of crop stress due to excessive heat and crop damage due to increased pests and disease. The longer growing season may help some crops but crops like corn and soybean will be negatively affected by the severe heat in the summer, which will decrease these crops’ yields. Additionally, increased frequency and severity may negatively impact infrastructure. For example, dams and levees may be compromised after a

prolonged drought if drying, reduction of soil strength, erosion, subsidence, or ground cracking occurs. Climate change is expected to increase the occurrence and duration of heat waves in the coming decades.

4.3 Earthquakes

Description

Earthquakes are sudden and rapid movements of the Earth's crust and are caused by the abrupt shifting of rocks deep underneath the earth's surface. These movements vary in length and may last from a few seconds to several minutes.

The seismicity, or seismic activity, of an area refers to the frequency, type, and size of earthquakes experienced over time. Earthquakes are measured using observations from seismometers. The Moment Magnitude Scale (MMS), which was developed in the 1970's, is the most common scale on which earthquakes larger than approximately 5.0 in magnitude are reported for the entire world. Earthquakes smaller than magnitude 5.0, which are more numerous, are reported by national seismological observatories and measured most on the local magnitude scale – also referred to as the Richter Scale. These two scales are numerically similar in their range of validity. Earthquakes of magnitude 3.0 or lower are often almost imperceptible or weak, while earthquakes of magnitude 7.0 or greater can potentially cause serious damage over larger areas.

Damage from an earthquake also depends on the earthquake's depth in the Earth's crust. The shallower an earthquake's epicenter, the more damage to structures it will cause. Alternatively, an earthquake can also be measured by its intensity. The Modified Mercalli Intensity Scale (MMI) ranges in value I to XII, in roman numerals (**Table 4.3.1**).

Earthquakes can happen anywhere without warning; they are low-probability, high-consequence events. Most major earthquakes in the U.S. have occurred in California as well as in Alaska, Hawaii, Oregon, Puerto Rico, Washington, and the entire Mississippi River Valley. There have been recorded earthquakes throughout the U.S., and the Ohio River Valley has experienced earthquakes exceeding the 3.0 magnitude within the last 25 years.

Location

Earthquakes are countywide hazards and can affect all areas and jurisdictions within Montgomery County. According to the Ohio Department of Natural Resources (ODNR), Ohio is located on the periphery of the New Madrid Seismic Zone, an area in and around Missouri that was the site of the largest earthquake sequence to occur in the country in the 1800s. Additionally, seismic activity is concentrated in the western Ohio region known as the *western Ohio seismic zone* (also referred to as the *Fort Wayne (Anna) seismogenic zone*), where more than 40 earthquakes have been felt since 1875. Montgomery County does fall in the western Ohio seismic zone.

There is a short fault line that runs north/south in southeast Montgomery County and north Warren County. (**Figure 4.3.2**).

Extent

Earthquakes pose a risk to life and property depending on the severity. To monitor earthquakes, the State of Ohio and the ODNR Division of Geological Survey coordinates a 29-station network (**Figure 4.3.3**) of seismograph stations throughout the state to continuously record earthquake activity. The Ohio Seismic Network (OhioSeis) stations are distributed across the state but are concentrated in the most seismically active areas or in areas that provide optimal conditions for detecting earthquakes. While the seismic network cannot predict earthquakes or provide an alert prior to an event, it can provide insight into earthquake risks in the state so that intelligent decisions about building and facility design and construction, insurance coverage, and other planning decisions can be made by individuals, business and industry, and governmental agencies.

According to the ODNR, there six Ohio Seismic Network monitoring stations in Montgomery County, and three in Montgomery's neighboring Ohio counties: Miami, Greene, and Butler. This sentence is unclear. Please fix the wording.

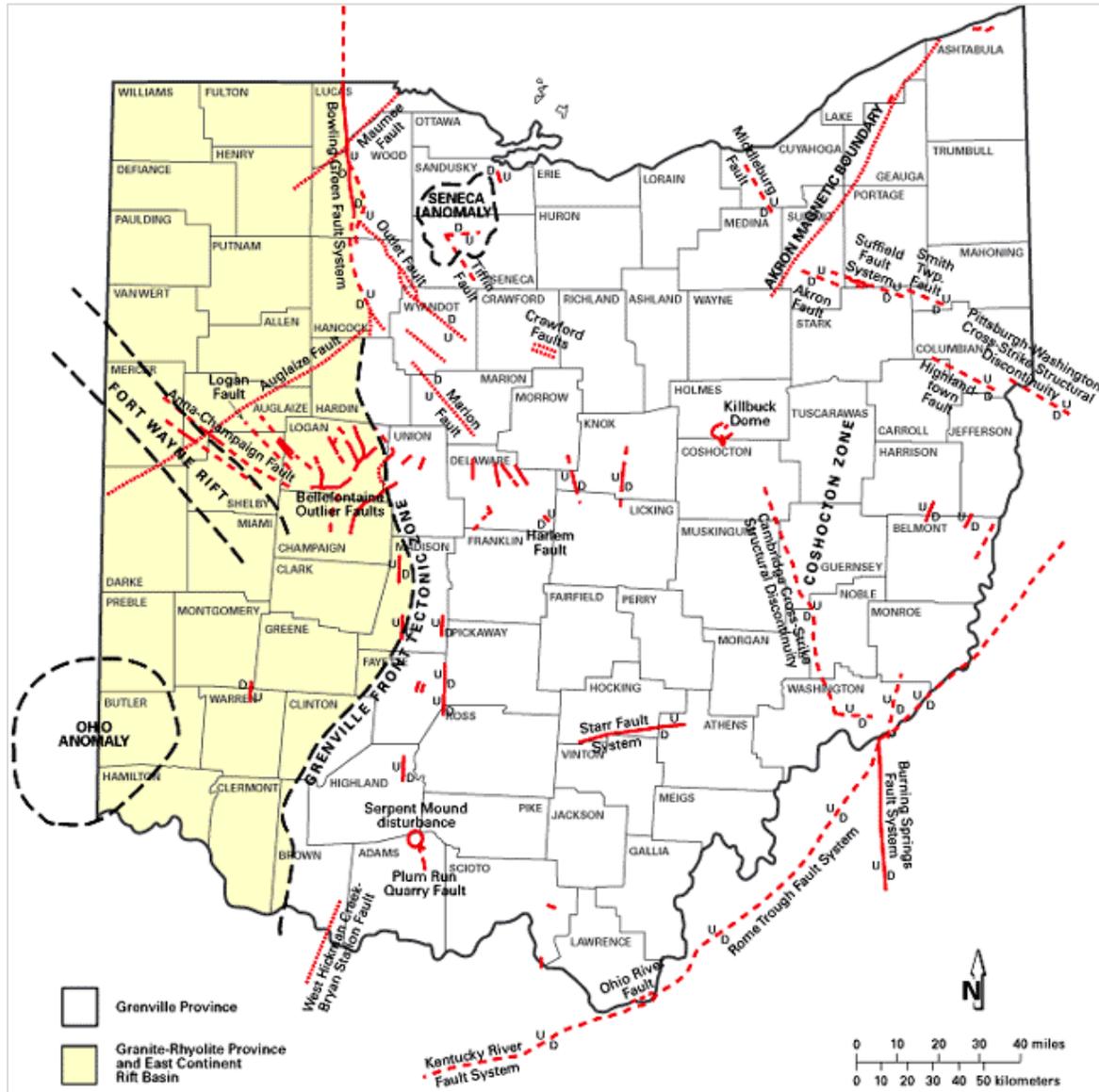
Earthquakes can yield a variety of different outcomes. With the ground shaking associated with earthquake events, buildings have a high potential to be impacted. If soil liquefaction, or the mixing of sand and soil with groundwater occurs, buildings can sink into the ground. Earthquakes also have the potential to rupture dams or levees along a river, resulting in flooding and even tsunamis (see Dam Failure section). Earthquakes can cause landslides or avalanches in high-risk areas and can cause mines to subside. Furthermore, earthquakes that break gas and power lines can result in fires.

Table 4.3.1: Modified Mercalli Intensity Scale

Modified Mercalli Intensity Scale		Magnitude
I	Detected only by sensitive instruments.	1.5
II	Felt by few persons at rest, especially on upper floors; delicately suspended objects may swing.	2
III	Felt noticeably indoors, but not always recognized as earthquake; standing autos rock slightly, vibrations like passing truck.	2.5
IV	Felt indoors by many, outdoors by few, at night some awaken; dishes, windows, doors disturbed; standing autos rock noticeably.	3
V	Felt by most people; some breakage of dishes, windows, and plaster; disturbance of tall objects.	3.5
VI	Felt by all, many frightened and run outdoors; falling plaster and chimneys, damage small.	4
VII	Everybody runs outdoors; damage to buildings varies depending on quality of construction; noticed by drivers of autos.	4.5
VIII	Panel walls thrown out of frames; walls, monuments, chimneys fall; sand and mud ejected; drivers of autos disturbed.	5
IX	Buildings shifted off foundations, cracked, thrown out of plumb; ground cracked; underground pipes broken.	5.5
X	Most masonry and frame structures destroyed; ground cracked, rails bent, landslides.	6
XI	Few structures remain standing; bridges destroyed, fissures in ground, pipes broken, landslides, rails bent.	6.5
XII	Damage total; waves seen on ground surface, lines of sight and level distorted, objects thrown up into air.	7 7.5 8

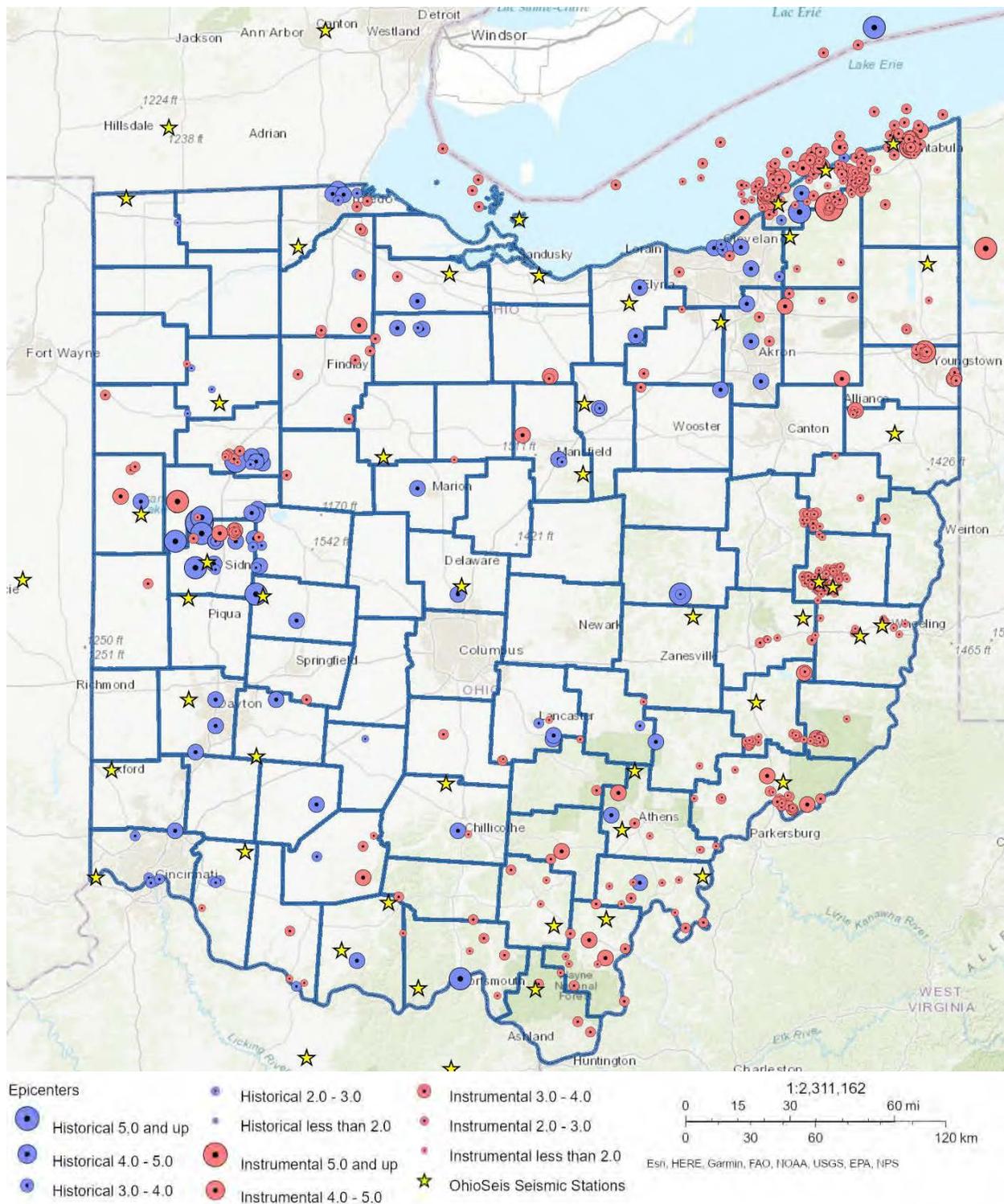
Source: ODNR

Figure 4.3.2: Ohio Faults and Seismic Zones



Source: ODNR

Figure 4.3.3: Earthquake Epicenters and Seismic Monitoring Stations in Ohio



Source: ODNR

History

More than 300 earthquakes of 2.0 magnitude or greater with epicenters in Ohio have occurred since 1776. Most of these events have been small, in the 2.0 to 3.0 magnitude range, while 15 earthquakes

have caused minor-to-moderate damage and no recorded deaths. Montgomery has had three earthquakes, one in 1834 with a 3.5 magnitude, one in 1873 with a 3.0 magnitude, and the last in 1950 with a 3.1 magnitude. There is no known damage.

Figure 4.3.4, below, displays epicenters of all historical earthquakes with a magnitude greater than 1.0. Locations and magnitudes of non-instrumental earthquakes correspond to felt area or maximum epicentral Modified Mercalli Intensities and may be in error by a considerable distance.

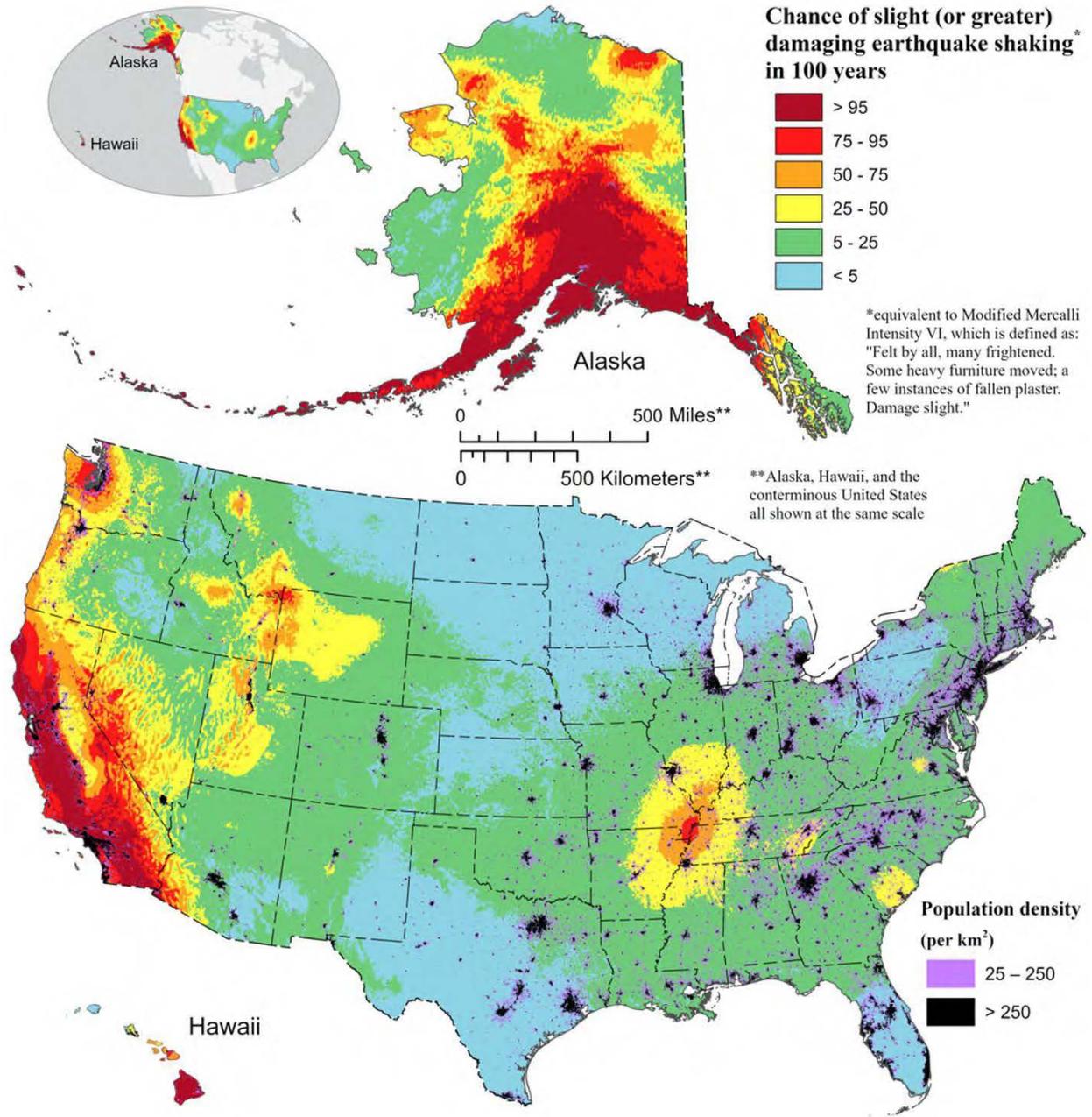
Probability

The USGS has both long-term and short-term probabilistic seismic hazard forecasts. In the 2024 one-hundred-year probabilistic seismic hazard forecast, the United States Geological Survey estimated that there is a 5 to 25 percent chance of potentially minor-damage ground shaking for Montgomery County (**Figure 4.3.4**).

The USGS also prepared national seismic hazard maps (NSHMP) for the United States. These time-independent maps are shown for two percent and ten percent probability of earthquake ground-shaking exceedance levels at specified probabilities over a 50-year period at several hundred thousand sites across the United States. The map (**Figure 4.3.6**) identifies that Montgomery County has an eight percent to 20 percent peak ground acceleration for two percent probability of exceedance in 50 years.

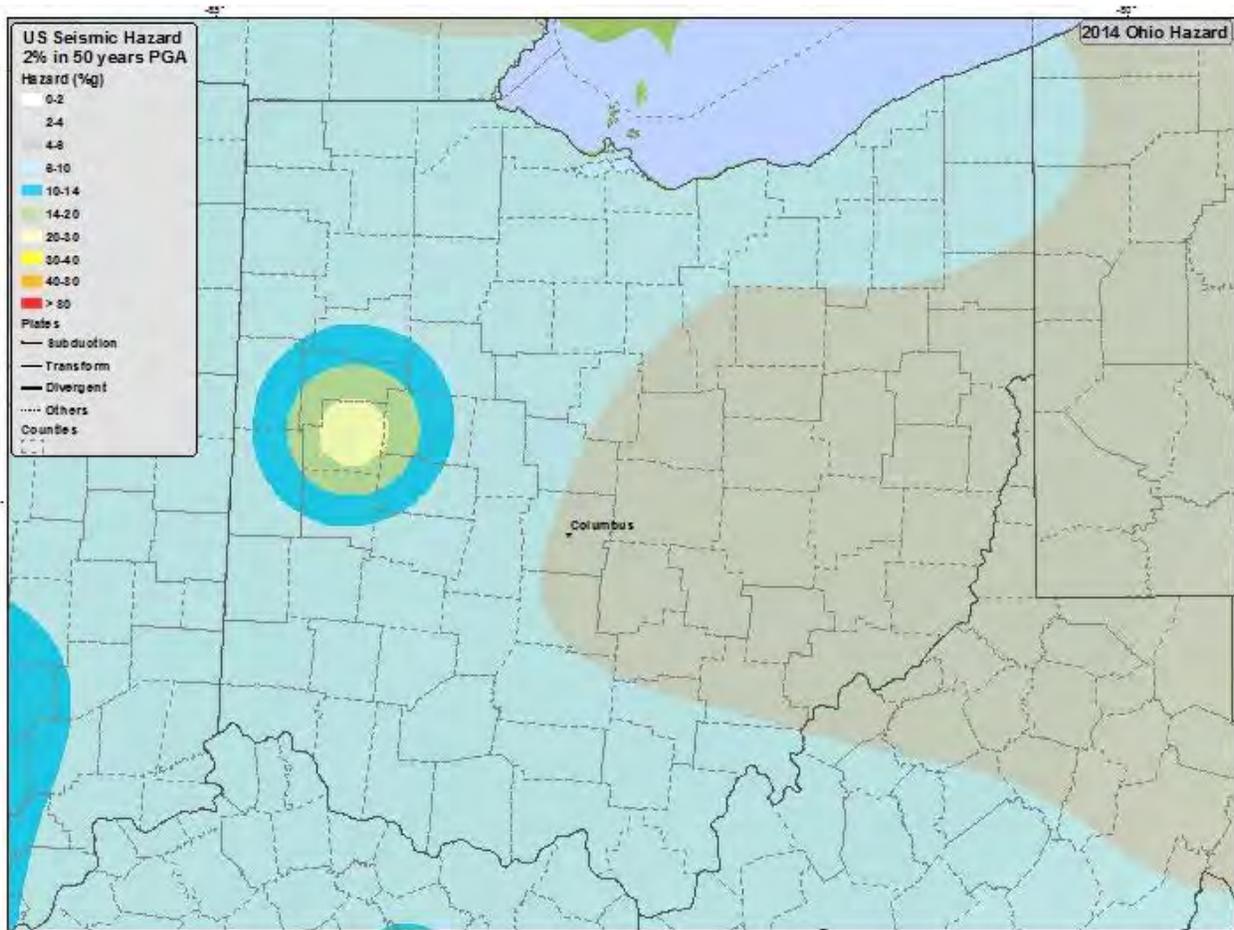
Furthermore, the ODNR indicates that the brief historic record of Ohio earthquakes suggests a risk of moderately damaging earthquakes in the western, northeastern, and southeastern parts of the State.

Figure 4.3.4: Earthquake Shaking and Seismic Design Categories



Source: USGS

Figure 4.3.5: 2014 Seismic Hazard Map of the State of Ohio



Source: USGS

Vulnerability Assessment

Infrastructure Impact

There have been three earthquakes with a 3.0 magnitude or higher in Montgomery County since 1834. The first earthquake recorded was in 1834 with a 3.5 magnitude, the second in 1873 with a 3.0 magnitude, and the final in 1950 with a 3.1 magnitude. This was the first known earthquake to happen in Montgomery County. Magnitudes under three are not generally noticed by people and cause little, if any damage. Buildings, roadways, and gas and power lines have the potential to be affected. Since the probability of an earthquake occurring in Montgomery County is less than one percent, there is a low risk of impact to infrastructure as a result.

Population Impact

There is a relatively low risk of earthquakes occurring in Montgomery County. Accordingly, there is low risk of impact to the population. If an earthquake would occur within Montgomery, the population could be impacted by loss of homes, loss of utilities, as well as potential reduction of air quality.

For social vulnerability, the National Risk Index indicates that the population in Montgomery County has a score of 90.2 (“relatively low”) for earthquakes. Earthquakes are unlikely to occur in Montgomery County; therefore, the population is unlikely to be affected by earthquakes. Socially vulnerable populations may be more affected by earthquakes if they live in older housing units or apartment complexes that do not have adequate earthquake-resilient infrastructure. The index indicates an

expected annual loss of \$3 million due to earthquakes with a less than 0.048 percent chance of an event occurring per year.

Property Damage

With any earthquake event, there is potential for property damage to occur, as ground shaking can lead to damaged buildings. Due to the non-site-specific nature of this hazard, **Table 4.13** lists the 14 census tracts in Montgomery County with the highest vulnerability.

Loss of Life

Montgomery County has no recorded earthquake events that have resulted in loss of life; however, in the event that an earthquake occurs, there is potential for loss of life. If there are more people and structures in an earthquake prone location, there is likely to be more of an impact. Loss of life can be mitigated by educating the public on proper protection in the event of an earthquake. For example, the USGS resources on preparing for an Earthquake hazard ([USGS Resources for Earthquake Preparedness](#)) as well as the Ready Campaign ([Ready.gov](#)) are national public service campaigns designed to educate and empower the American people to prepare for, respond to, and mitigate disasters.

Economic Losses

Earthquakes have the potential to damage infrastructure, resulting in the economic burden of clean up and repairs. Potential economic losses and damage associated with Montgomery County for earthquakes according to FEMA’s National Risk Index are recorded in **Table 4.3.6** below. This table summarizes the population from 2020, building value, expected annual loss (EAL) for buildings, and expected annual loss (EALP) for population equivalence in Montgomery County. Compared with other hazards, earthquakes are relatively unlikely to occur in Montgomery County, meaning there is low risk of economic loss as a result of an earthquake.

Table 4.3.6: Structure and Population Vulnerability from Earthquakes

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
001501	\$0	\$162,081	\$78,375	\$240,456
003404	\$0	\$67,715	\$11,399	\$79,114
080700	\$0	\$59,334	\$9,450	\$68,784
140100	\$0	\$42,869	\$20,999	\$63,867
001700	\$0	\$52,046	\$10,409	\$62,455
130102	\$0	\$49,970	\$12,394	\$62,365
003500	\$0	\$49,295	\$8,692	\$57,987
150100	\$0	\$39,199	\$14,746	\$53,945
050107	\$0	\$44,465	\$8,109	\$52,574
030100	\$0	\$42,908	\$6,482	\$49,390
040406	\$0	\$40,307	\$8,864	\$49,171
001802	\$0	\$40,325	\$8,215	\$48,540
040401	\$0	\$39,423	\$8,890	\$48,314

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
115011	\$0	\$34,100	\$11,919	\$46,020
125104	\$0	\$37,056	\$6,932	\$43,987
120101	\$0	\$32,940	\$10,044	\$42,983
040302	\$0	\$32,532	\$10,415	\$42,948
100400	\$0	\$34,665	\$7,626	\$42,291
110100	\$0	\$39,160	\$3,074	\$42,235
110202	\$0	\$32,266	\$6,847	\$39,113
Total	\$0	\$972,655	\$263,883	\$1,236,538

Source: FEMA National Risk Index

Future Trends

Land Use and Development Trends

While incidence and likelihood of earthquakes is low in Montgomery County, all communities are at low risk. By planning for and managing land use to accomplish social, ecological, and economic sustainability, communities can reduce the negative impacts caused by earthquakes. This can be accomplished through comprehensive land-use plans and supportive federal and state policies. As such, enforcement of stricter building codes that ensure that all new developments are built up to code can reduce risk. Infrastructure (constructed facilities and lifelines) should be designed and constructed to resist earthquake shaking following the current state-of-the-art engineering and technology practices.

More buildings but less people can mean more property loss but less population vulnerability. Similar median structure year built but older relative to today could mean more vulnerability to properties and inhabitants. The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. If new residential buildings are built to code, there are no known changes in the risk associated with earthquakes.

Climate Change

Climate change has no known effect on the probability or extent of earthquakes.

4.4 Flood

Description

FEMA describes a flood as “a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters [and] the unusual and rapid accumulation or runoff of surface waters from any source.” Floods are typically riverine, coastal, or shallow. Flash floods are floods that occur quickly, even occurring without visible signs of precipitation.

Urban flooding is a type of flood that can occur in areas of development that have a high level of impervious surfaces such as concrete. The level of development and the level of stormwater management practices impact the severity of urban flooding.

Common flood-related terms include:

- **100-Year Flood:** A flood that has a one percent chance of occurring each year. The 100-year floodplain can be seen in **Figure 4.4.1: Flood Hazard Map**. The elevation of the water from the 100-year flood is called the Base Flood. Mitigation strategies should be based on the base flood elevation.
- **Floodplain:** An area that has the potential to flood from any source.
- **Floodway:** Sometimes referred to as a regulatory floodway. FEMA defines a floodway as “the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the Base Flood without cumulatively increasing the water surface elevation more than a designated height.”
- **Flash flood:** Flash floods are typically caused by heavy rainfall over a short period of time. These floods are particularly dangerous because they can occur in minutes and can sometimes occur even without rainfall such as when an ice jam breaks or dissolves. Areas impacted by wildfires are particularly susceptible to flash floods. Flash floods can occur just about anywhere with enough rainfall and are not restricted to the 100-year floodplain. Development/restriction to drainage or increased impervious surfaces can contribute to flash flood frequency.

Location

Flooding can occur throughout Montgomery County. Flash flooding is more likely to occur in developed areas or along lakes and rivers. **Figure 4.4.1** shows the location of the 100-year floodplain. Floods can and do occur outside the FEMA defined 100-year flood zone. Sometimes very small watersheds are not included in the FEMA analyses, but floods can occur in these smaller watersheds as well.

Extent

Montgomery County currently has 116 flood insurance maps (see **Appendix F**). The most recent update is from October 2022.

Montgomery County and 17 communities within the County, including the Cities of Brookville, Carlisle, Centerville, Clayton, Dayton, Englewood, Huber Heights, Kettering, Miamisburg, Moraine, Riverside, Trotwood, Union, Vandalia and West Carrollton participate in the National Flood Insurance Program (NFIP) (**Table 4.4.2**). The Village of Germantown also participates in the NFIP. The Villages of Farmersville and New Lebanon do not participate in the NFIP. Centerville and Kettering are in both Montgomery County and Greene County. Huber Heights and Union are in both Montgomery County and Miami County. Carlisle is in both Montgomery County and Warren County.

Table 4.4.2: National Flood Insurance Program Participation for Montgomery County, Ohio

Community Name	County	NFIP Coordinator	Init FHBM Identified	Init FIRM Identified	Effective Map Date	Reg-Emer Date	Participating in NFIP
Montgomery County*	Montgomery County	Steve Scott	06/02/78	12/15/81	10/27/22	12/15/81	Yes
City of Brookville	Montgomery County	Sonja Keaton	02/15/74	10/15/81	01/06/05	10/15/81	Yes
City of Centerville	Montgomery County Greene County	Jim Brinegar	05/17/74	11/18/81	10/27/22	11/18/81	Yes
City of Clayton	Montgomery County	Jack Kuntz	11/10/78	01/06/05	01/06/05	11/10/05	Yes
City of Dayton	Montgomery County	Scott Adams	03/15/74	12/04/79	10/27/22	12/04/79	Yes
City of Englewood	Montgomery County	Eric Smith	05/24/74	01/06/05	01/06/05	01/06/05	Yes
City of Huber Heights	Montgomery County/Miami County	Russel Bergman		12/11/84	08/02/11	12/11/84	Yes
City of Kettering	Montgomery County Greene County	Steve Bergstresser	05/31/74	10/15/80	10/27/22	10/15/80	Yes
City of Miamisburg	Montgomery County	Chris Fine	03/01/74	06/15/81	01/06/05	06/15/81	Yes
City of Moraine	Montgomery County	Tony Wenzler	03/01/74	10/15/81	01/06/05	10/15/81	Yes
City of Oakwood	Montgomery County	William Duncan		01/06/05	01/06/05	01/06/06	No
City of Riverside	Montgomery County	Nia Holt	02/15/74	12/15/81	10/27/22	12/15/81	Yes
City of Trotwood	Montgomery County	Johnny McCluskey	02/15/74	12/18/79	01/06/05	12/18/79	Yes
City of Union	Montgomery County Miami County	John Applegate	02/14/75	01/06/05	08/02/11	08/24/81	Yes
City of Vandalia	Montgomery County	Rob Cron	06/07/74	11/04/81	01/06/05	11/04/81	Yes
City of West Carrollton	Montgomery County	John Vance	02/08/74	10/15/81	01/06/05	10/15/81	Yes
Village of Farmersville	Montgomery County	Derek Shell		01/06/05	01/06/05	01/06/06	No
Village of Germantown	Montgomery County	Kelly Novak	06/28/74	07/02/81	01/06/05	07/02/81	Yes
Village of New Lebanon	Montgomery County	Raymond Arriola		01/06/05	01/06/05	01/06/06	No

Source: NFIP Community Status Book

Repetitive Loss

There are 17 repetitive loss *FEMA Community Status Book Report* and two severe repetitive loss properties in or near Montgomery County, Ohio, detailed in **Table 4.4.3**. FEMA defines a repetitive loss property as an insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year period since 1978. FEMA defines a severe repetitive loss property as a single family property that is covered under flood insurance by the NFIP and has incurred flood-related damage for which four or more separate claims payments have been paid under flood insurance coverage, with the amount of each claim payment exceeding \$5,000 and with cumulative amount of such claims payments exceeding \$20,000; or for which at

least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

Table 4.4.3: Repetitive Loss Properties in Montgomery County, Ohio

Jurisdiction Occupancy	Total RL/SRL Structures	RL Structures	SRL Structures	Total Losses	Total Paid
MONTGOMERY COUNTY (UNINCORPORATED)	11	11	0	26	\$348,316
Single Family Residential	11	11	0	26	\$348,316
DAYTON, CITY OF	2	1	1	6	\$104,984
Single Family Residential	2	1	1	6	\$104,984
CLAYTON, CITY OF	1	0	1	4	\$34,411
Single Family Residential	1	0	1	4	\$34,411
KETTERING, CITY OF	2	2	0	5	\$24,289
Single Family Residential	2	2	0	5	\$24,289
HUBER HEIGHTS, CITY OF	1	1	0	3	\$21,764
Single Family Residential	1	1	0	3	\$21,764
TROTWOOD, CITY OF	1	1	0	2	\$7,371
Single Family Residential	1	1	0	2	\$7,371
BROOKVILLE, CITY OF	1	1	0	2	\$4,707
Single Family Residential	1	1	0	2	\$4,707
Countywide Total	19	17	2	48	\$545,842

Source: Ohio EMA

History

There have been 114 floods or flash floods in Montgomery County between January 1996 and August 2022. These events have caused \$673,500 in property damage. There has been one major disaster declaration related to flooding covering Montgomery County since 1996. There have been six flood events that caused property damage since the 2019 Montgomery County Natural Hazard Mitigation Plan, five of which were on March 20, 2020, and one on August 26, 2021. The major disaster declaration flooding, floods that have caused the greatest amount of damage and those that have caused damage since the 2019 Montgomery County Natural Hazard Mitigation Plan are described below:

Flooding in the City of Dayton on August 26, 2021:

Showers and thunderstorms developed during the afternoon hours in a warm and humid airmass in place across the Ohio Valley. A few motorists were stranded in high water near downtown Dayton. Montgomery County reported \$10,000 in property damage. There were no deaths or injuries reported.

Flooding in Montgomery County on March 20, 2020:

Showers and thunderstorms developed through the early morning hours as a low-pressure system moved through the Ohio Valley. Some of the storms produced locally heavy rainfall amounts of 2 to 3 inches. Vehicles were stuck in high water near the intersection of Shoup Mill Road and Riverside Drive, at Stop 8 Road and Webster Street, and near the intersection of Ark Avenue and Klepinger Road. There was a high-water rescue on Dayton Farmersville Road near Liberty Ellerton Road. Several rescues were made in waist high water on North Snyder Road. There was minor damage, equaling \$38,000. There were no deaths or injuries reported.

Flooding in Montgomery County on June 20, 2014:

Slow moving thunderstorms developed in a very unstable airmass during the peak heating of the day. These storms produced damaging winds, heavy rainfall, flooding, and flash flooding. Multiple water rescues from vehicles were reported in the Washington Park area near Mc Ewen Road, Congress Park, and Paragon Road due to heavy rainfall. Montgomery County reported \$300,000 in property damage. No deaths or injuries were reported.

Major Disaster Declaration for Severe Winter Storms, Flooding, and Mudslides, February 15, 2005:

A widespread area of showers and thunderstorms ahead of a warm front affected much of central and western Ohio. One to three inches of rain fell across the region, exacerbating existing flooding from previous rains and snowmelt. The heaviest rainfall occurred from west central Ohio southeast through the Columbus area. Numerous roads and low-lying areas were flooded, and several creeks and streams rose out of their banks. A Major Disaster Declaration (DR-1580-OH) was issued on February 15, 2005. Flooding affected Montgomery County from about January 5 through January 11 and the county reported \$30,000 in property damage. No deaths or injuries were reported. Public Assistance was offered to 59 counties, including Montgomery County, and totaled \$97,938,844.86.

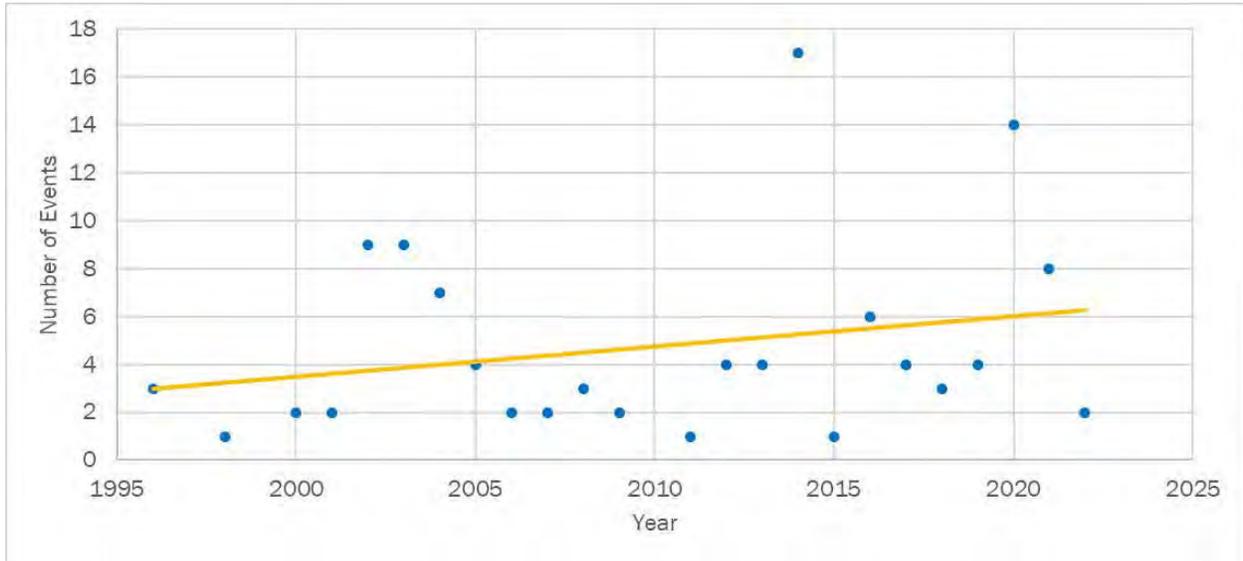
Flooding in Montgomery County on June 16, 2003:

Thunderstorms producing heavy rain moved across portions of the Miami Valley and southwest Ohio throughout the morning. Some locations saw two to four inches of rain, and combined with rainfall over the previous few days, flooding problems developed. Numerous roads were flooded and closed across the region. Up to 50 homes and one business sustained flood damage in the Dayton suburb of Riverside, and a few homes had flooded basements in western Greene County. Montgomery County reported \$100,000 in property damage. No deaths or injuries were reported.

Probability

Figure 4.4.5 Between 1995 and 2022, Montgomery County experienced 114 flooding events, including both floods and flash floods. Annually, this amounts to approximately four floods or flash floods per year. The yellow trendline of flood occurrences per year is increasing, which may suggest that Montgomery County can expect a similar frequency of flood events each year or more. In addition, according to the State of Ohio Hazard Mitigation Plan (SOHMP), increased precipitation and variability by climate change will also increase the likelihood and intensity of flood events. The Climate Change section in Future Trends discusses climate change further.

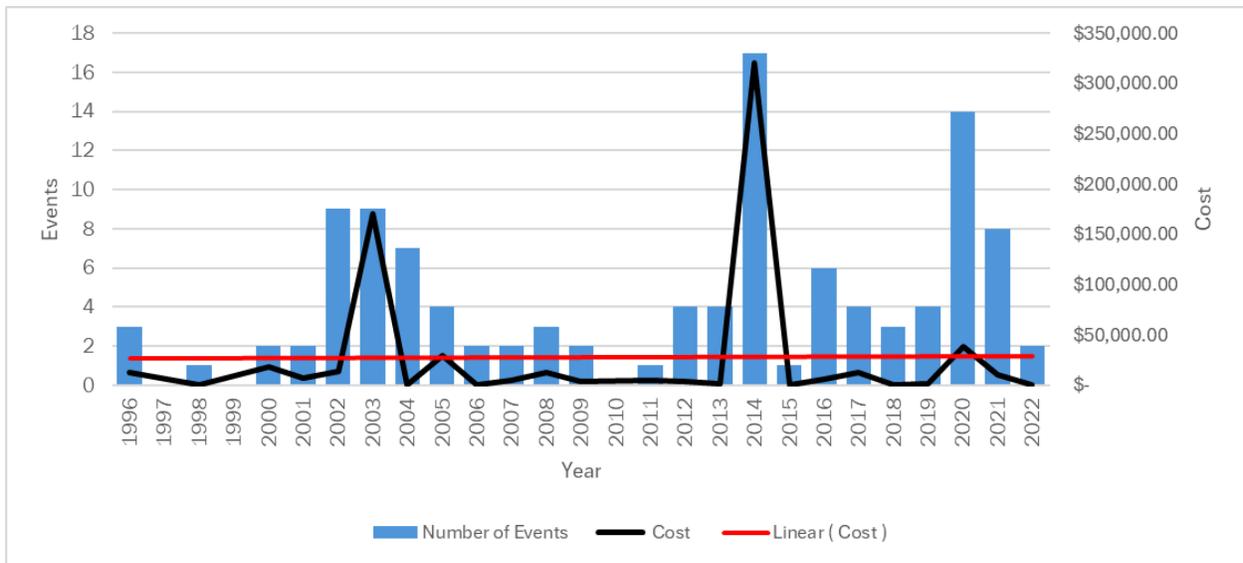
Figure 4.4.4: Probability of Flooding



Data Source: NOAA

Figure 4.4.5 shows both the trend of flood events and affiliated cost over time since January 1995. Between 1995 and 2022, floods or flash flood events have resulted in \$673,500 in property damages (Source: NCEI). Annually, this amounts to approximately \$25,903 in property damages. The trendline (shown in red) indicates a relatively steady cost in property damages.

Figure 4.4.5: Probability and Cost of Flooding



Data Source: NOAA

Vulnerability Assessment

Infrastructure Impact

Floods can impact roadways, including interstates and state routes, by blocking them due to high water, filling them with debris or washing away the road altogether.

Population Impact

Floods and flash floods have caused damage to occupied homes and businesses in the past. During flood events, shelter and temporary housing may need to be provided to those impacted by flooding.

For social vulnerability, in the National Risk Index, “riverine flooding” had a score of 20.42 (“Relatively High”). People that are most vulnerable to flooding are those who live within the 100-year floodplain in structures that are not elevated about the base flood elevation. The index indicates an expected annual loss of \$7.3 million due to flood events with 1.5 events occurring per year.

Property Damage

Floods have the potential to damage infrastructure, resulting in the economic burden of clean up and repairs. Potential economic losses and damage associated with Montgomery County for riverine flooding according to FEMA’s National Risk Index are recorded in **Table 4.4.6** below. This table summarizes the population from 2020, building value, expected annual loss (EAL) for buildings, and expected annual loss (EALP) for population equivalence in Montgomery County. Compared with other hazards, riverine flooding has an average rating of relatively moderate for the top 20 census tracts, meaning there is moderate risk of economic loss because of a flood in Montgomery County.

Table 4.4.6: Structure and Population Vulnerability from Flooding

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
050302	\$0	\$2,949	\$225,004	\$227,953
030100	\$568	\$8,008	\$138,696	\$147,271
165000	\$3,834	\$1,660	\$130,751	\$136,244
090600	\$0	\$1,621	\$124,390	\$126,011
050600	\$13,938	\$1,891	\$95,251	\$111,080
021400	\$0	\$1,010	\$99,804	\$100,814
080400	\$0	\$786	\$99,542	\$100,328
021000	\$0	\$907	\$97,002	\$97,908
021700	\$0	\$1,103	\$85,238	\$86,341
021301	\$1,549	\$1,117	\$75,547	\$78,213
130102	\$1,283	\$928	\$63,383	\$65,593
080500	\$9	\$680	\$64,882	\$65,570
050301	\$3,131	\$543	\$61,355	\$65,029
080200	\$0	\$589	\$63,649	\$64,237
040306	\$1	\$821	\$48,820	\$49,642
090302	\$634	\$1,059	\$43,882	\$45,575
070500	\$236	\$560	\$43,392	\$44,188
050503	\$0	\$428	\$42,379	\$42,807
150100	\$18,882	\$435	\$19,405	\$38,722



Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
021602	\$0	\$486	\$37,787	\$38,273
Total	\$44,064	\$27,579	\$1,660,157	\$1,731,800

Source: FEMA National Risk Index

Loss of Life

There are no reported deaths from flood events in Montgomery County between January 1996 through August 2022. Loss of life is possible in future floods or flash floods.

Economic Losses

Floods can halt economic activity, block roadways, and destroy agricultural crops. Businesses may need to shut down their operations due to flood water damage or road closures. Crop losses are also possible during floods or flashfloods.

Future Trends

Land Use and Development Trends

Any development that occurs in flood zones will be at risk. Development in these areas should be limited. Flash flooding is more likely to occur in areas with a high percentage of impervious surfaces. Future land use practices should limit the percentage of impervious surfaces. **Chapter 5** contains mitigation actions that address these issues.

More buildings but less people can mean more property loss but less population vulnerability. Similarly, older structures could mean more vulnerability to properties and inhabitants. The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164,000. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. If construction practices, including the location of the new housing units, follow best practices for floodplain management, there are no known changes in the risks associated with riverine flooding.

Communities that are participating in the National Flood Insurance Program (NFIP) are required to adopt and enforce regulations and codes that apply to new developments in Special Flood Hazard Areas (SFHAs). These local floodplain management regulations must contain, at a minimum, NFIP requirements and standards that apply not only to new structures, but also to existing structures which are Substantially Improved (SI), or Substantially Damaged (SD) from any cause, whether natural or human-induced hazards.

According to 44 CFR 59.1, substantial improvement means any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. Likewise, substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. SI/SD requirements are also triggered when any combination of costs to repair and improvements to a structure in an SFHA equals or exceeds 50 percent of the structure’s market value (excluding land value).

$$\frac{(Cost\ to\ Repair) + (Cost\ of\ Improvements)}{Market\ Value\ of\ Structure} \geq 50\ Percent$$

Enforcing the SI/SD requirements is a very important part of a community's floodplain management responsibilities. The purpose of the SI/SD requirements is to protect the property owner's investment and safety, and, over time, to reduce the total number of buildings that are exposed to flood damage, thus reducing the burden on taxpayers through the payment of disaster assistance. SD/SI requirements are enforced by the local floodplain administrator and monitored by the Ohio Department of Natural Resources (ODNR) Floodplain Management Program during Community Assistance Visits. If a local floodplain administrator is overwhelmed by the number of SD/SI inspections after a large event, ODNR has developed a network of building code officials that are trained in conducting SD/SI field determinations. Help with SD/SI inspections can be requested through the county emergency management agency director.

For more information regarding Substantial Improvement and Substantial Damage, please refer to [FEMA's Substantial Improvement/ Substantial Damage Desk Reference, P-758](#) or contact the [ODNR Floodplain Management Program](#).

Climate Change

According to the International Panel on Climate Change, climate change has impacted human and natural systems. For example, infrastructure and stormwater systems in the Midwest are threatened by increased precipitation frequency and intensity induced by climate change (NCA 2018). According to the SOHMP, increased precipitation and variability by climate change will also increase the likelihood and intensity of flood events, which will mostly occur during the summer and fall months. These events will mainly occur from late summer to early winter, increasing the likelihood of cool season flood events in the late autumn and early winter. Additionally, heavy precipitation events and precipitation are projected to increase during winter and spring, causing flooding, sewer overflow, inundated roadways, delayed growing season and crop damage, and infrastructure damage. Emergency action plans, green infrastructure, and anticipating extreme events are important steps to prepare for climate change.

4.5 Invasive Species

Description

Invasive species are non-native and have potential negative impacts on the environment and economy of Montgomery County. The National Oceanic and Atmospheric Administration (NOAA) defines an invasive species as “an organism that causes ecological or economic harm in a new environment and is not native.” Harmful species are species that are native to a region, but that also cause significant ecological, public health, or economic harm. Their growth is often encouraged through human activity.

Invasive species can be terrestrial (land dwelling) or aquatic (water dwelling). Terrestrial species include plants, trees, shrubs, animals, birds, and insects, as well as fungi, bacteria, molds, and viruses. Aquatic species include aquatic plants and algae, fish, mollusks, amphibians, and insects, as well as fungi, bacteria, molds, and viruses.

Location

Invasive species have the potential to impact any location within the County. The most invasive of terrestrial species degrade the State’s woodlands, wetlands, and prairies. Aquatic Invasive Species use rivers to spread. Ohio has over 66,000 miles of streams, 312 miles of Great Lakes shoreline, nearly 2,000 inland lakes and reservoirs, and shares major watersheds with other states and Canada. Montgomery County lies in the Mississippi River basin, which is an ecologically diverse river system, and is susceptible to invasions through the Ohio River and its tributaries.

Extent

Once invasive species become widely established, controlling their spread is both technically difficult and expensive, making eradication nearly impossible. Invasive species can usually overtake native species and alter the natural wildlife habitat.

The Ohio Department of Agriculture (ODA) has issued a quarantine for six counties in Ohio (Butler, Clermont, Hamilton, Greene, Montgomery, and Warren counties) beginning April 11, 2024, to prevent the spread of the box tree moth (**Figure 4.5.1**). Plants should not be transported outside of the quarantine zone.

Figure 4.5.1: Box Tree Moth



The **Emerald Ash Borer (EAB)** (Figure 4.5.2) is a common invasive species in Montgomery County. It is an exotic beetle that feeds on ash trees inhibiting its ability to transport water and nutrients. This insect was first found in Ohio in 2002 and has since been found in every county in the State. The EAB was first discovered in Montgomery County in 2007. Since the EAB has been found in every county, there are no quarantines in effect within Ohio’s borders. Ohio is still listed in the Federal quarantine boundary.

Figure 4.5.2: Emerald Ash Borer and Feeding Tunnels



Source: David Cappaert (Left) and National Park Services (Right)

Approximately 2,300 plant species occur in the wild in Ohio. Of these, about 78 percent are native, that is, they were found in the region before the times of European settlement. Of the remaining 22 percent, fewer than 100 have been identified to be problems in natural areas. According to the Ohio Invasive Plants Council, there are 38 invasive plant species in Ohio that have been banned and more under consideration (Table 4.5.3). These plants cannot be sold, distributed, or imported.

Studies conducted by Ohio Department of Natural Resources, Ohio Sea Grant, and the Ohio State University have identified over 70 invasive aquatic species in Ohio (Table 4.5.4). With the exception of White Perch, it is unlawful to possess, import, or sell these species live.

Table 4.5.3: Plant Invasive Species in Ohio as of January 7, 2018

Scientific Name	Common Name
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Alliaria petiolate</i>	Garlic mustard
<i>Berberis vulgaris</i>	Common barberry
<i>Butomus umbellatus</i>	Flowering rush
<i>Celastrus orbiculatus</i>	Oriental bittersweet
<i>Centaurea stoebe</i> ssp. <i>Micranthos</i>	Spotted knapweed
<i>Dipsacus fullonum</i>	Common teasel
<i>Dipsacus laciniatus</i>	Cutleaf teasel
<i>Egeria densa</i>	Brazilian elodea
<i>Elaeagnus angustifolia</i>	Russian olive
<i>Elaeagnus umbellate</i>	Autumn olive
<i>Epilobium hirsutum</i>	Hairy willow herb

Scientific Name	Common Name
<i>Frangula alnus</i>	Glossy buckthorn
<i>Heracleum mantegazzianum</i>	Giant hogweed
<i>Hesperis matronlis</i>	Dame’s rocket
<i>Hydrilla verticillata</i>	Hydrilla
<i>Hydrocharis morsus-ranae</i>	European frog-bit
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lonicera maackii</i>	Amur honeysuckle
<i>Lonicera morrowii</i>	Morrow’s honeysuckle
<i>Lonicera tatarica</i>	Tatarian honeysuckle
<i>Lythrum salicaria</i>	Purple loosestrife
<i>Lythrum virgatum</i> (effective January 7, 2019)	European wand loosestrife
<i>Microstegium vimineum</i>	Japanese stiltgrass
<i>Myriophyllum aquaticum</i>	Parrotfeather
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil
<i>Nymphoides peltata</i>	Yellow floating heart
<i>Phragmites australis</i>	Common reed
<i>Potamogeton crispus</i>	Curley-leaved pondweed
<i>Pueraria montana var. lobate</i>	Kudzu
<i>Pyrus calleryana</i> (effective January 7, 2023)	Callery pear
<i>Ranunculus ficaria</i>	Fig buttercup, lesser celandine
<i>Rhamnus cathartica</i>	Common Buckthorn
<i>Rosa multiflora</i>	Multiflora rose
<i>Trapa natans</i>	Water chestnut
<i>Typha angustifolia</i>	Narrow-leaved cattail
<i>Typha x glauca</i>	Hybrid cattail
<i>Vincetoxicum nigrum</i>	Black Swallow-Wort

Table 4.5.4: Aquatic Invasive Species in Ohio

Type	Scientific Name	Common Name
Fish	<i>Alosa pseudoharengus</i>	Alewife
Fish	<i>Carassius auratus</i>	Goldfish
Fish	<i>Carassius carassius</i>	Crucian Carp
Fish	<i>Carassius gibelio</i>	Prussian Carp

Type	Scientific Name	Common Name
Fish	<i>Channa app. and Parachanna app.</i>	Snakeheads
Fish	<i>Claris batrachus</i>	Walking Catfish
Fish	<i>Ctenopharyngodon idella</i>	Diploid Grass Carp - White Amur
Fish	<i>Ctenopharyngodon Idella</i>	Grass Carp
Fish	<i>Cyprinus carpio</i>	Common Carp
Fish	<i>Fundulus catenatus</i>	Northern Studfish
Fish	<i>Fundulus diaphanus</i>	Eastern Banded Killifish
Fish	<i>Gambusia holbrooki and Gambusia affinis</i>	Eastern & Western Mosquitofish
Fish	<i>Gasterosteus aculeatus</i>	Three Spine Stickleback
Fish	<i>Gymnocephalus cernuus</i>	Ruffe
Fish	<i>Hypophthalmichthys harmandi</i>	Large-scale Silver Carp
Fish	<i>Hypophthalmichthys molitrix</i>	Silver Carp
Fish	<i>Hypophthalmichthys nobilis</i>	Bighead Carp
Fish	<i>Lates niloticus</i>	Nile Perch
Fish	<i>Leuciscus idus</i>	Ide
Fish	<i>Morone americana</i>	White Perch
Fish	<i>Mylopharyngodon piceus</i>	Black Carp
Fish	<i>Neogobius melanostomus</i>	Round Goby
Fish	<i>Osmerus mordax</i>	Rainbow Smelt
Fish	<i>Perca fluviatilis</i>	European Perch
Fish	<i>Perccottus glenii</i>	Amur Sleeper
Fish	<i>Petromyzon marinus</i>	Sea Lamprey
Fish	<i>Phoxinus phoxims</i>	Eurasian Minnow
Fish	<i>Proterorhinus marmoratus</i>	Tubenose Goby
Fish	<i>Pseudorasbora parva</i>	Stone Moroko
Fish	<i>Rhodeus sericeus</i>	Bitterling
Fish	<i>Rutilus sericeous</i>	Roach
Fish	<i>Sander lucioperca</i>	Zander
Fish	<i>Scardinius erythrophthalmus</i>	European Rudd
Fish	<i>Scardinius erythrophthalmus</i>	Rudd
Fish	<i>Silurus glanis</i>	Wels Catfish
Fish	<i>Tinca tinea</i>	Tench
Mollusks	<i>Bellamya (Cipangopaludina)</i>	Mystery Snails

Type	Scientific Name	Common Name
Mollusks	<i>Bithynia tentaculata</i>	Faucet Snail
Mollusks	<i>Corbicula fluminea</i>	Asian Clam
Mollusks	<i>Dreissena bugensis</i>	Quagga Mussel
Mollusks	<i>Dreissena polymorpha</i>	Zebra Mussel
Mollusks	<i>Limnoperna fortune</i>	Golden Mussel
Mollusks	<i>Potamopyrgus antipodarum</i>	New Zealand Mudsnail
Crustaceans	<i>Bythotrephes longimanus</i>	Spiny Waterflea
Crustaceans	<i>Cercopagis pengoi</i>	Fishhook Waterflea
Crustaceans	<i>Cherax destructor</i>	Yabby
Crustaceans	<i>Cherax tenuimanus</i>	Marron
Crustaceans	<i>Dikerogammarus villosus</i>	Killer Shrimp
Crustaceans	<i>Eriocheir sinensis</i>	Chinese Mitten Crab
Crustaceans	<i>Faxonius virilis</i>	Virile Crayfish
Crustaceans	<i>Hemimysis anomala</i>	Bloody-red Shrimp
Crustaceans	<i>Procambarus clarki</i>	Red Swamp Crayfish
Plant	<i>Butomus umbellatus</i>	Flowering-rush
Plant	<i>Egeria densa</i>	Brazilian Waterweed
Plant	<i>Hydrilla verticillata</i>	Hydrilla
Plant	<i>Hydrocharis morsus-ranae</i>	European Frog-bit
Plant	<i>Iris pseudacorus</i>	Yellow Iris
Plant	<i>Ludwigia peploides</i>	Creeping Water-primrose
Plant	<i>Lysimachia nummularia</i>	Moneywort
Plant	<i>Lythrum salicaria</i>	Purple Loosestrife
Plant	<i>Marsilea quadrifolia</i>	European Water Clover
Plant	<i>Myriophyllum aquaticum</i>	Parrotfeather
Plant	<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil
Plant	<i>Najas minor</i>	Brittle Naiad
Plant	<i>Nelumbo nucifera</i>	Pink Lotus
Plant	<i>Nitellopsis obtusa</i>	Starry Stonewort
Plant	<i>Nymphoides peltata</i>	Yellow Floating Heart
Plant	<i>Phalaris arundinacea</i>	Reed Canary Grass
Plant	<i>Phragmites australis</i>	Common Reed (Phragmites)
Plant	<i>Pistia stratiotes</i>	Water Lettuce

Type	Scientific Name	Common Name
Plant	<i>Potamogeton crispus</i>	Curly-Leaf Pondweed
Plant	<i>Trapa natans</i>	Water Chestnut
Plant	<i>Typha angustifolia, Typha x glauc</i>	Narrowleaf and Hybrid Cattails

Other invasive species that have the potential to impact to Montgomery County and the surrounding counties in Ohio include:

Asian Long-Horned Beetles are wood-boring beetles native to Asia that were unintentionally introduced to North America, likely in wood packing material. Clermont County experienced an infestation in 2011. They pose a significant threat to forested land. There are no known Asian Long-Horned Beetle infestations in Montgomery County.

Mute Swans are invasive species found on public lakes across Ohio, originally known as winter visitors with the first published record in the United States in 1936 and Ohio in 1987. During the breeding season, March through May, adult mute swans become highly territorial and will fight to push native birds out of their nesting area. Mute swans have attacked humans and pets during this time as well. Mute swans can consume submerged aquatic vegetation and usually uproot the whole plant leaving nothing behind. This takes away natural habitat from fish and leaves little food source for native waterfowl. The removal of aquatic vegetation can also cause water quality issues and erosion problems.

History

Montgomery County has been impacted by the Emerald Ash Borer, with infestations starting as early 2007. The extent of this damage is unknown. Box Tree Moths have been found in Montgomery County, and most of the county is part of a quarantine zone. Additionally, it is possible that any of the other species listed above have at one point affected the County and its residents.

Probability

Since there are many invasive species throughout Ohio, it is probable that Montgomery County will experience some of the invasive species listed above (Tables 4.5.1 and 4.5.2).

Vulnerability Assessment

Infrastructure Impact

There are no likely impacts to public roadways or utilities. Public trees may be destroyed or impacted by various invasive species. Aquatic invasive species could destroy water quality, make poor habitat for fish, and clog water intake pipes. Some species also increase fire potential and can be problematic to levees, dams, and irrigation systems.

Population Impact

There are no likely impacts on the local population. Recreational activities such as boating and fishing may be mildly impacted.

Property Damage

Property damage, in the form of reduced values from impacts on landscaping, is likely.

Loss of Life

Loss of life because of invasive species is very unlikely. Some of these species consumed as food could lead to diseases and other health impacts in humans.

Economic Losses

Economic impacts can vary greatly depending on the target and the invasive species and their impacts on those targets. Agricultural and horticultural revenue losses may be experienced if crops and plants are affected by an invasive species. Also, there may be indirect economic losses with degradation of forested lands and tree canopies. Examples include reduction in viable lumber for construction, increased heating and cooling costs, and reduced property value.

Climate Change

According to the Fourth National Climate Assessment, warming temperatures caused by climate change are aiding in the spread of invasive species. Climate change can favor non-native invading species over native ones due to the tolerance of invasive species to warmer climate zones and native communities' decreased resistance to the new extreme weather in their environment.

Land Use and Development Trends

There could be slight impacts on development and land use due to invasive species. Some invasive species can be particularly damaging to crops, agricultural land, and wetlands. Future development may involve site investigation to identify any potential invasive species on the property.

4.6 Landslide, Mine Subsidence, and Erosion

Description

The Ohio Department of Natural Resources (ODNR) defines a landslide as “a variety of downslope movements of earth materials. Some slides are rapid, occurring in seconds, whereas others may take hours, weeks, or even longer to develop.” Landslides are commonly triggered by human-induced vibrations, over-steepened slopes, increased weight on a slope, and removal of vegetation on areas with landslide-prone slopes. Landslides can also be caused by heavy precipitation.

Similarly, erosion is the process of the wearing-away or removal of soil by large storms, flooding, strong wave action, sea level rise, fluvial (riverine) currents, and human activities. Erosion can lead to downstream sedimentation, causing water quality impacts (USEPA 2024). Erosion can occur at the bottom of a streambed or riverbed, deepening the body of water. It can also occur outward, wearing away at the banks of the stream or river and causing damage to nearby structures. Wind erosion is an additional concern for farmland and rangeland.

Subsidence is the motion of the earth’s surface as it shifts downward relative to a benchmark (often sea level) of the surrounding terrain. In Ohio, the two primary causes are abandoned underground mines (AUMs) and karst. Karst is a topographic feature formed when carbonate rock, such as limestone, dolomite, and gypsum, is eroded by water draining or moving from these areas. Karsts are commonly represented as caves. For the purposes of this Plan, there are no known karsts in Montgomery County, so karst subsidence will not be assessed further.

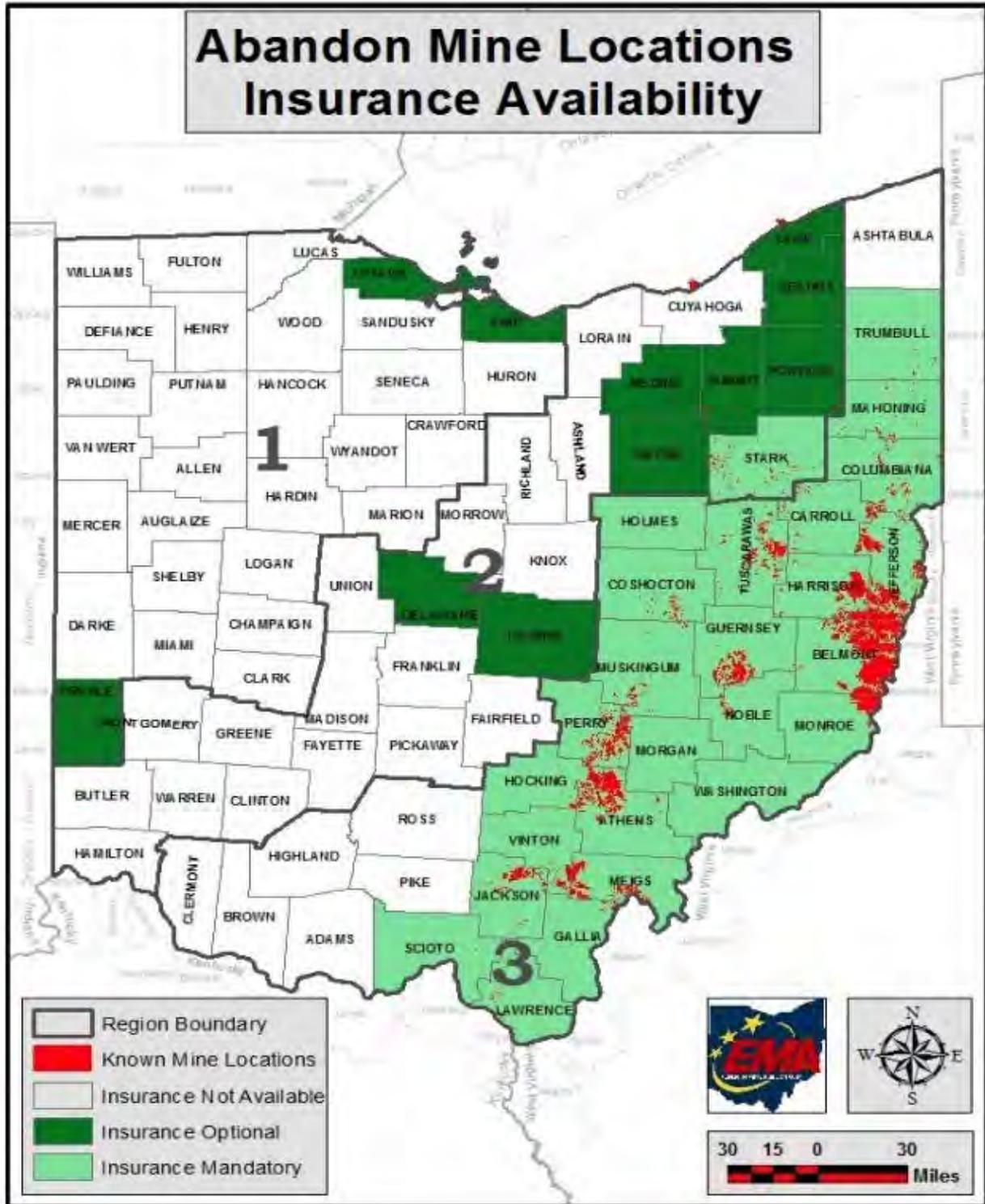
According to the Ohio Administrative Code 3901-1-48, mine subsidence is loss caused by the collapse or lateral or vertical movement of structures resulting from the caving in of underground mines including coal mines, clay mines, limestone mines, and salt mines. Mine subsidence does not include loss caused by earthquakes, landslides, volcanic eruptions, or collapse of strip mines, storm and sewer drains, or rapid transit tunnels. Several factors determine the potential for mines to collapse including depth, mining technique used, types of rock and/or soils, and the development on the ground surface. Additionally, abandoned underground coal mines in Ohio have the potential to discharge acidic water which, if discharged into creeks or streams, can alter the chemical composition of the water habitat and cause considerable harm to sensitive aquatic life.

Location

Figure 4.6.1 shows the location of abandoned underground mines in Ohio and which counties have the option or are required to obtain mine subsidence insurance. The majority of abandoned underground mines can be found in region 3 or in nearby counties. **Figure 4.6.2** shows the location of areas at risk for landslides. Montgomery County is in region 2 and has low incidence of landslides, however nine counties in region 2 have the option of mine subsidence insurance.

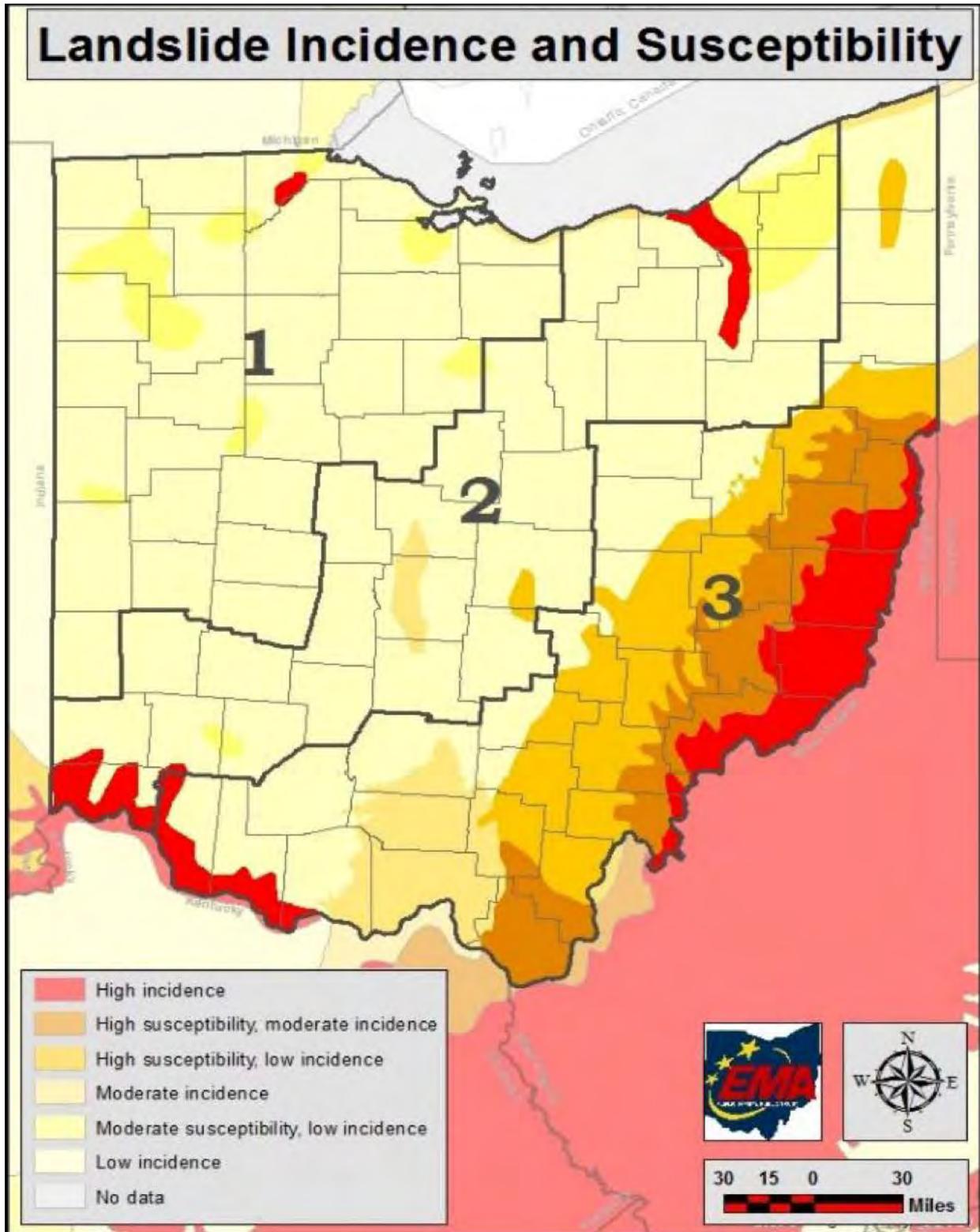
Erosion can occur throughout Montgomery County, particularly along major bodies of water such as the Great Miami River, Mad River, and Stillwater River. Additional tributaries subject to erosion include Holes Creek, Lesley Run, Sugar Creek, Toms Run, Twin Creek, and Wolf Creek. The Miami Conservancy District, an organization dedicated to water resource management in the Great Miami River Watershed, notes that destructive erosion is becoming more common, especially as offshore development continues to remove critical forestland. Similar erosion across the country has led to water quality concerns with sedimentation being the top pollutant in rivers and streams (USEPA 2024).

Figure. 4.6.1: Abandon Mine Locations and Insurance Availability



Source: State of Ohio Enhanced Hazard Mitigation Plan

Figure 4.6.2: Landslide Incidence and Susceptibility Map



Source: State of Ohio Enhanced Hazard Mitigation Plan

Extent

According to ODNR Division of Geologic Survey, Montgomery County is home to 12 bedrock formations: the Lockport Dolomite, Arnheim Formation, Drakes Formation, Whitewater Formation, Liberty Formation Undivided, Sub-Lockport Undifferentiated, Miamitown Shale-Fairview Formation Undivided, Ordovician Undivided, Cedarville Dolomite, Springfield Dolomite, Euphemia Dolomite Undivided, and the Waynesville formation. These formations include a mix of dolomite, shale, limestone, and chert.

There are three major types of landslides:

1. Rotational slump, or a mass of weak rock or sediment moving as a block unit along a slope. These are the largest types of landslides found in Ohio.
2. Earthflow, or a mass of rock or sediment flowing downslope. These are the most common landslides in Ohio.
3. Rock fall, or a rapid downslope movement of large blocks of bedrock. Most rockfalls in Ohio involve sandstone or limestone that have been weakened by surface water.

According to the Ohio Mine Subsidence Insurance Underwriting Association, mine subsidence is caused by the collapse of underground mines causing damage or movement to a property and/or structure located above. Mine Subsidence insurance is required for 26 counties and optional for 11 counties in Ohio State. Insurance for the mandatory counties has an annual premium of \$1.00 and \$5.00 for optional counties. Montgomery County residents do have the option of enrolling in Mine Subsidence Insurance. According to the ODNR there aren't any abandoned underground mines in Montgomery County. The most common mines in Montgomery County are gravel pits. There are 120 mines in Montgomery County, 76 of which are gravel pits according to the USGS.

It is difficult to directly measure erosion and the risk of erosion. There are other properties, however, that can be used to measure erosion: soil surface stability, aggregate stability, infiltration, compaction, and content of organic matter. Measuring these properties can help with understanding the susceptibility of erosion at a specific location. Comparing visual observations along with quantitative measurements can help provide information about soil surface stability, sedimentation, and soil loss.

Table 4.6.3 provides a summary of the fragile soil index for Montgomery County with the number of acres and percentage area within the county classified across different soil susceptibility categories. Fragile soils are those that are most vulnerable to degradation and tend to be highly susceptible to erosion and can have a low capacity to recover after degradation has occurred (low resilience). Fragile soils are generally characterized by a low content of organic matter, low aggregate stability, and weak soil structure. They are generally located on sloping ground, have sparse plant cover, and tend to be in arid or semiarid regions. The index can be used for conservation and watershed planning to assist in identifying soils and areas highly vulnerable to degradation.

Table 4.6.3 Fragile Soil Index for Montgomery County

Rating	Acres	Percent of County
Fragile	4,903.00	1.60%
Moderately fragile	201,928.70	67.90%
Slightly fragile	12,032.80	4.00%
Null or Not Rated	78,434.00	26.40%
Total	297,298.50	100.00%

Source: USDA Natural Resources Conservation Service, Web Soil Survey)

History

According to the Ohio Department of Transportation (ODOT) there have been 10 landslides and in Montgomery with six happening along I-70 near the City of Vandalia and City of Huber Heights, two on I-75 south of the City of Vandalia, one on South Main Street in the City of Englewood, and one on US-40 north of the City of Huber Heights. Additionally, there have been three rockslide events in Montgomery County, two on I-70 near the City of Huber Heights and one on I-70 near the City of Englewood. All 10 landslides and three rockslides are rated Tier 1. Tier 1 ratings do not require a detailed rating and have a low probability of additional movement and a low probability of significant impact to an ODOT asset or adjacent property.

Table 4.6.4 shows the most up to date probability of occurrences of landslides and rockslides in Montgomery County. “Tier” refers to the probability of an event occurring at a given site, with Tier 1 being low probability and Tier 4 being very high probability.

Since incidents of landslides and rockslides often go unreported, individual sites are an accurate way to discuss both past problem areas and future probability of events. The most common tier in the County is Tier 1, with 13 Tier 1 sites.

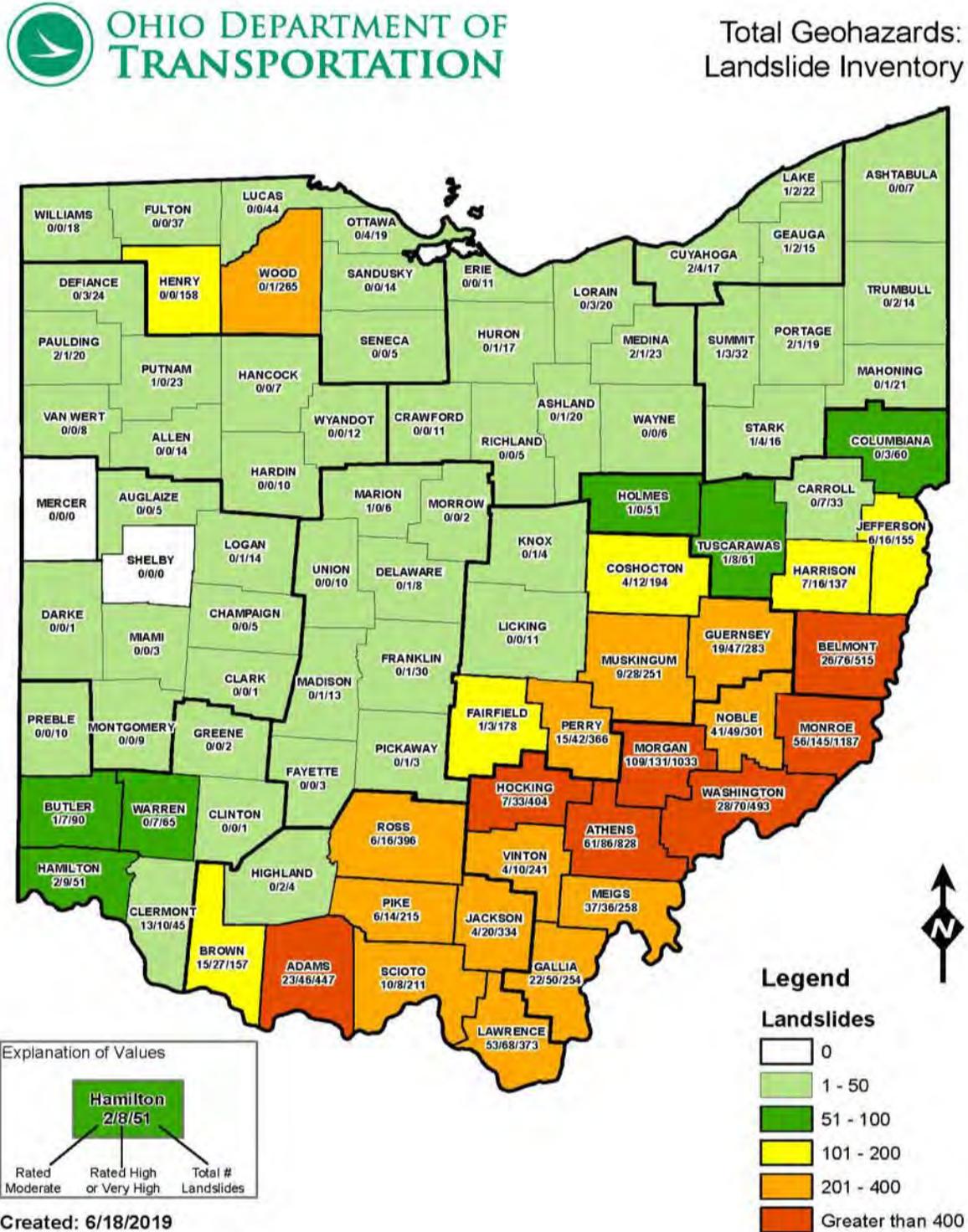
Table 4.6.4: Landslide and Rockfall Sites

Tier	Landslides	Rockslides	Total
Tier 1	10	3	13
Tier 2	0	0	0
Tier 3	0	0	0
Tier 4	0	0	0
Total	10	3	13

Source: Ohio Department of Transportation Geohazards Dashboard

Figures 4.6.5 and 4.6.6 show that Montgomery County has low occurrences of landslides and rock falls as compared to other counties within Ohio with nine total landslides as of June 18, 2019. Since 2019 there has been one additional landslide. These events are only reported on roadways, and do not constitute a countywide assessment on their own.

Figure 4.6.5: State of Ohio Total Geohazards Landslide Inventory



Probability

According to the ODNR, Montgomery County falls within an area of low risk for slope failure. Landslides should be considered a likely event. The 1870 Ohio Mine Law required a mine be registered if it had more than ten employees and mined more than 200,000 tons of coal. This leaves an undocumented number of smaller mines that closed prior to 1870. There are a known 6,000 underground mines in Ohio. On February 08, 2022, the federal government granted the State of Ohio \$46.4 million to reclaim abandoned coal mines. There are no documented mine collapses in Montgomery County and mine subsidence should be considered an unlikely event.

Vulnerability Risk Assessment

Infrastructure Impact

Landslides can block or damage roadways, and damage existing utility infrastructure. Mine subsidence can occur under existing roadways or utility infrastructure causing anything from minor damage to complete destruction.

Population Impact

Landslides and mine subsidence can cause injury or death if a person is struck by or trapped under falling earthen material. Mine subsidence can cause sinkholes under occupied structures which could lead to injuries.

For social vulnerability, mine subsidence is not listed in the National Risk Index, but landslide is listed with a score of .85.6 (“relatively moderate”). In general, the Montgomery County population is more exposed to these hazards because they live in hilly areas that are more susceptible to landslides. The index indicates an expected annual loss of \$122,000 due to landslides with zero events occurring per year.

Property Damage

Properties caught in the path of a landslide can be destroyed or severely damaged. Properties, including their structures, can be destroyed by mine subsidence.

Additionally, there are currently 67 state-owned and state-leased critical facilities located within Montgomery County, as determined by ODNR. All 67 of these facilities are located within a low landslide risk area or an area that has not been evaluated and have a value of approximately \$76,369,896. Potential economic losses and damage associated with Montgomery County for Landslides according to FEMA’s National Risk Index are recorded in **Table 4.6.7** below. This table shows the top 20 census tracts, summarizing the population from 2020, building value, expected annual loss (EAL) for buildings, and expected annual loss (EALP) for population equivalence in Montgomery County.

Table 4.6.7: Structure and Population Vulnerability from Landslides

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
100101	\$0	\$5,948	\$1,045	\$6,993
165000	\$0	\$5,571	\$860	\$6,431
050302	\$0	\$4,266	\$854	\$5,120
020200	\$0	\$4,448	\$540	\$4,988
020400	\$0	\$4,275	\$582	\$4,857
001100	\$0	\$3,436	\$975	\$4,411

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040102	\$0	\$3,828	\$363	\$4,191
003404	\$0	\$3,559	\$348	\$3,907
080500	\$0	\$3,111	\$558	\$3,669
000801	\$0	\$2,768	\$753	\$3,521
003300	\$0	\$2,734	\$781	\$3,514
050600	\$0	\$2,970	\$534	\$3,504
040103	\$0	\$2,871	\$413	\$3,284
020100	\$0	\$2,486	\$498	\$2,984
001600	\$0	\$2,545	\$377	\$2,922
050301	\$0	\$2,518	\$392	\$2,911
040401	\$0	\$2,557	\$298	\$2,855
030100	\$0	\$2,523	\$77	\$2,601
040204	\$0	\$2,154	\$316	\$2,470
000500	\$0	\$1,938	\$350	\$2,288
Total	\$0	\$66,506	\$10,915	\$77,421

Source: FEMA National Risk Index

Loss of Life

Loss of life is possible during sudden mine subsidence or landslides. However, there are no known fatalities in Montgomery County due to mine subsidence or landslides.

Economic Losses

Landslides and mine subsidence can block or destroy sections of roadways vital to shipping. Stores, storage facilities, and other structures that are important to economic activity can also be severely damaged or destroyed. It can also be quite expensive to repair sinkholes when they occur.

Future Trends

Land Use and Development Trends

Uses that serve vulnerable populations, such as schools and hospitals, should not be placed in areas that are in high-risk zones for landslides. Development should be limited to areas with minimal slope to reduce potential losses during landslides. Development should also consider low-impact techniques to reduce the likelihood of runoff from precipitation and therefore reduce the risk of landslides. If new residential construction units are within areas with steep slopes, it would increase property and population vulnerabilities in those areas.

More buildings but less people can mean more property loss but less population vulnerability. Similar median structure year built but older relative to today could mean more vulnerability to properties and inhabitants. The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164,000. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional

decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with wildfires.

Climate Change

According to the Midwest chapter of the Fourth National Climate Assessment, the likelihood of precipitation has increased nine percent, and the amount of rain falling during heavy precipitation events has increased by 30 percent on average between 1901 to 1960. Extreme precipitation could increase the likelihood of landslides in areas with steep slopes. Flooding caused by heavy precipitation could also increase the rate of runoff for acid mine drainage along rivers and streams. More frequent and intense rain events can also increase erosion rates and lead to greater amounts of sediment runoff into rivers, lakes, and streams (U.S. Environmental Protection Agency 2023).

4.7 Severe Summer Weather

Description

Severe summer weather events may include severe thunderstorms and thunderstorm winds, hail, and lightning. High winds, tornadoes, and flooding may also be related to severe summer storms, and due to the potential threat of these events, they are each discussed in separate risk assessments. While tropical storms and hurricanes are also forms of severe storms, Montgomery County does not have any record of such events affecting the County; therefore, the County has not deemed tropical storms and hurricanes to be a threat, and these specific types of weather will not be addressed further.

According to the National Weather Service (NWS), a severe thunderstorm is a thunderstorm that produces a tornado, has winds of at least 58 MPH, and/or hail at least one inch in diameter. A Severe Thunderstorm Watch is issued by the NWS if conditions are favorable for the development of severe thunderstorms. A watch is usually in place for four to eight hours, during which time people should be prepared to move to a safe place if threatening weather approaches.

A Severe Thunderstorm Warning is issued if either the WSR-88D radar indicates a severe thunderstorm or if a spotter reports a storm producing hail or winds meeting the criteria outlined in the description above. The WSR-88D radar is an advanced Weather Surveillance Doppler Radar utilized by the NWS to generate a radar image. The NWS recommends that people in the affected area seek safe shelter immediately, as severe thunderstorms have the potential to produce tornadoes with little-to-no advance warning. Lightning frequency is not a criterion for issuing a severe thunderstorm warning. The warnings are usually issued for one hour and can be issued without a Severe Thunderstorm Watch already in effect. The National Weather Service Forecast Office in Wilmington, Ohio is responsible for issuing Severe Thunderstorm Watches and Warnings for Montgomery County.

Lightning is caused by a rapid discharge of electrical energy that has built up in the atmosphere between clouds, the air, or the ground. Lightning strikes can be either direct or indirect. A direct strike is when lightning strikes a building or a specific zone, which can result in fusion points melting holes of varying sizes at the point of impact of materials with high resistivity. An indirect lightning strike is when lightning causes power surges that disrupt electrical equipment.

Severe summer weather can also create strong winds – often called “straight-line” winds – to differentiate thunderstorm winds from tornadic winds. These winds, which have the potential to cause damage, are caused by an outflow generated by a thunderstorm downdraft.

Hail is a type of frozen precipitation that occurs when thunderstorm updrafts carry raindrops upward into extremely cold atmospheric zones where they freeze before falling to the ground. The resulting hailstones can fall at speeds greater than 100 MPH and range in size from smaller than 0.50 inches (the size of a pea) to 4.5 inches (the size of a softball) (Source: National Weather Service).

The NWS can issue various types of wind advisories and warnings. A **wind advisory** is issued when sustained winds of 31 to 39 MPH are reached for an hour or more and/or if there are wind gusts of 46 to 57 MPH for any duration. A **High Wind Watch** indicates that sustained, strong winds are possible and outdoor items should be secured. People should modify plans, so they are not caught outside. Additionally, a **High Wind Warning** indicates that sustained, strong winds (40 MPH or greater) with even stronger gusts (greater than 58 MPH) are happening. People should seek shelter, and those driving should keep both hands on the wheel and slow down. An **extreme wind warning** is issued for surface winds of 115 MPH or greater associated with non-convective, downslope, derecho (not associated with a tornado), or sustained hurricane winds that are expected to occur within one hour.

Location

Severe summer weather is a countywide hazard, and all of Montgomery County is susceptible to severe summer weather.

Extent

Severe summer weather events have the potential to create large-scale damage in Montgomery County. Specifically, lightning is responsible for approximately 20 deaths annually across the United States, as well as hundreds of injuries (Source: NOAA). Winds associated with severe summer storms have the potential to cause damage by bringing down tree limbs and generating widespread power outages. Additionally, hail can result in property damage. Severe summer storms can lead to flooding, downed trees and power lines, and other dangerous conditions.

History

According to the National Centers for Environmental Information (NCEI), there have been 552 high-, strong-, or thunderstorm wind events, five heavy rain events, eight heat, or excessive heat events, three lightning events, and 172 hail events recorded in Montgomery County from January 1995 to December 2023. These events resulted in \$136 million in property damage and \$16,100 in crop damage. There were two deaths and seventeen injuries caused by severe summer weather events in Montgomery County. One death was caused by thunderstorm wind on April 29, 1996, in Montgomery County, one death was caused by a high wind event on November 15, 2020, when a tree struck a woman in her head and trapping her underneath, and one death caused by a high wind event on April 09, 2002, when wind gusts caused a semi tractor to overturn killing the driver. There were three injuries due to high wind on March 9, 2002; nine injuries due to lightning on June 30, 2002; two injuries due to hail on May 25, 2011; one injury due to lightning on April 8, 2015; and two injuries due to thunderstorm wind on June 8, 2015. All severe storm events from 1995 to 2023 are summarized in **Table 4.7.1**, below:

Table 4.7.1: Thunderstorm-Related Events in Montgomery County since 1995

Severe Storm Event Type	Number of Events	Injuries	Deaths	Property Damage	Crop Damages
Excessive Heat	5	0	0	\$0	\$0
Hail	172	2	0	\$70,103,000	\$16,000
Heat	3	0	0	\$0	\$0
Heavy Rain	5	0	0	\$1,000	\$0
High Wind	18	3	2	\$63,896,500	\$0
Lightning	3	10	0	\$100,000	\$0
Strong Wind	1	0	0	\$10,000	\$0
Thunderstorm Wind	345	2	1	\$1,959,450	\$100
Total:	552	17	3	\$136,069,950	\$16,100

Source: NOAA Storm Events Database

Montgomery County has not had any disaster declarations for severe storms since the previous hazard mitigation plan. However, the County has been subject to one Major Disaster Declarations (DR) and two emergency declarations (EM) for severe storms and hurricanes (Hurricane Katrina Evacuation and Hurricane Ike Remnants) since January 1995. Several of the most damaging events and/or events that resulted in deaths and/or injuries are described in more detail below.

High Wind Event throughout Montgomery County, November 15, 2020:

A low-pressure system, moved northeast towards Canada as a cold front moved across the region. The two systems led to a convective line with damaging thunderstorms. Wind gusts were measured at 66

MPH at the Dayton airport. Wind gusts caused numerous trees to fall. In the City of Dayton, a tree stuck a woman in the head and trapping her. She died of her injuries. No other deaths or injuries were reported. Montgomery County reported \$50,000 in property damage.

Thunderstorm Wind Event throughout Montgomery County, June 8, 2015:

Scattered thunderstorms moved through the area with wind gusts up to 52 MPH. The wind caused a large tree to fall on a house, injuring two people. There were no deaths or other injuries reported. Montgomery County reported \$7,500 in property damage.

Lightning Event in the City of Dayton, April 8, 2015:

Thunderstorms with lightning developed across the region on April 8, 2015. While running across a parking lot at the University of Dayton, a student was struck by lightning. The student was hospitalized with a broken jaw and serious burns. There were no deaths or other injuries reported. No property damage was reported in Montgomery County.

Emergency Declaration for Severe Storms, June 30, 2012:

An unstable airmass and northwesterly flow interacted to produce a derecho throughout northern Illinois. The derecho moved east over western Ohio, producing straight line wind damage. The derecho and thunderstorm downed numerous trees, tree limbs, and power poles. Wind gusts up to 71 MPH were reported. Power outages were widespread and large hail was also spotted within stronger portions of the storm. On June 30, 2012, an Emergency Declaration (EM-3346-OH) was declared for every county in Ohio. There were no deaths or injuries reported in Montgomery County. Montgomery County did not have any property damage reported.

Hail Event in the Village of Miamisburg, May 25, 2011:

A low-pressure system moved east over the Ohio Valley developing widespread severe thunderstorms, with large hail and damaging wind. In the Village of Miamisburg hail up to three inches in diameter was reported. While running for shelter, one adult and one child were struck by large hail sustaining injuries. No deaths or other injuries were reported. Montgomery County reported \$10,000 in property damage.

Major Disaster Declaration for Windstorm Associated with Tropical Depression Ike, October 24, 2008:

A frontal boundary over the Ohio Valley combined with the remnants of Hurricane Ike on September 14, 2008. Wind gusts of 69 MPH were recorded at Dayton airport. Significant damage throughout the county was reported to structures and crops. Wind gusts downed numerous powerlines causing widespread power outages. Montgomery County reported \$63.7 million in property damage. Wind gusts downed numerous trees and powerlines. A Major Disaster Declaration (DR-1805-OH) was declared on October 24, 2008, for 33 counties in Ohio. Public assistance was offered for each county, including Montgomery County. Approximately \$38 million was approved for public assistance. There were no deaths or injuries reported in Montgomery County.

High Wind Event throughout Montgomery County, March 9, 2002:

High winds with gusts up to 84 MPH caused extensive damage across Montgomery County. Many trees and power poles were blown down. Approximately 100,000 people were without power at one point. The high winds caused car accidents, which resulted in three individuals sustaining injuries. One man was killed with his semi tractor overturned. A tree fell on a mobile home, trapping two people briefly. No other deaths or injuries were reported. Montgomery County reported \$85,000 in property damage.

Lightning Event in the Village of Kettering, June 30, 2002:

Lightning struck a tree of an outdoor party, causing nine people who were standing near the tree to be injured. The injured party reported burned feet, and one person was held overnight for observation,

but was released the next day. There were no deaths or other injuries reported. No property damage was reported in Montgomery County.

Hail Event in the Village of Huber Heights, April 9, 2001:

Golf ball size hail caused extensive structural damage across the eastern part of Montgomery County. No deaths or other injuries were reported. Montgomery County reported \$70 million in property damage.

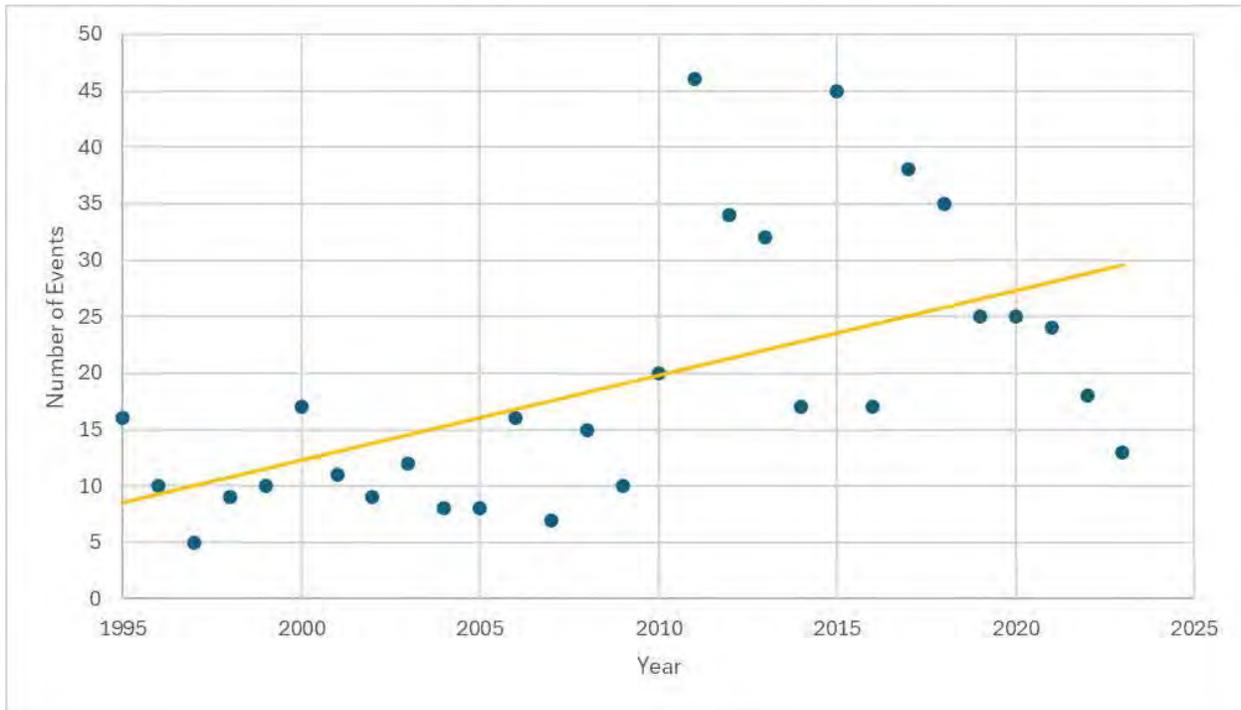
Thunderstorm Wind Event throughout Montgomery County, April 29, 1996:

A thunderstorm moved through the region on April 29, 1996, bringing wind gusts up to 100 MPH and 0.88-inch diameter inch hail. The high winds downed over 100 trees and the church steeple to be destroyed. Over 25,000 people were without power. There was one death reported, but no details were found on the death. No other deaths or injuries were reported. Montgomery County reported \$300,000 in property damage.

Probability

According to the NCEI, there have been 552 severe summer storm events reported in Montgomery County from January 1995 to December 2023 with total losses reaching at least \$136 million in property damage and \$16,100 in crop damage. This amounts to around 19 severe summer storm events annually with average annual damages of approximately \$4.9 million. **Figure 4.7.2** below shows the trend in number of severe summer weather events per year since 1995. The yellow trend line has a positive slope, which indicates that the number of severe summer storms has increased over the last 28 years. The year 2011 had 46 severe summer weather events, the highest out of the last 29 years. In 2015, there were 45 severe summer weather events recorded. Since 2009 there hasn't been a year with 10 or less severe summer weather events reported. Preliminary research suggests that the frequency and intensity of severe thunderstorms could increase as the climate changes, according to the National Climate Assessment. The Climate Change section in Future Trends discusses climate change further.

Figure 4.7.2: Severe Summer Storm Probability



Source: NOAA

Vulnerability Assessment

Infrastructure Impact

Above-ground infrastructure is at risk for storm damage by wind and falling debris. For infrastructure, high winds and hail are the most damaging part of a severe storm. Thunderstorm winds can strip bark from trees and detach limbs. If large branches fall, they can damage buildings and supporting above-ground infrastructure. In the most severe storms with high winds, large trees can be uprooted and have the potential to fall on buildings including houses, which can cause harm or death.

Utilities are at risk for damage by severe summer storms, as well. Electrical lines are spread throughout the County connecting homes, businesses, and other facilities. Severe storms are likely to down tree limbs and generate other debris that can affect above-ground electrical lines causing power outages. Downed power lines that are still live are extremely hazardous and can cause death by electrocution.

Population Impact

Summer storms are random in nature and affect the entire area of the County. Everyone within the County should be prepared during a storm event. Populations residing in mobile home parks are particularly vulnerable and should seek shelter.

For social vulnerability, according to the National Risk Index, hail, lightning, and strong wind had scores of 99.0 (“relatively high”), 88.3 (“relative moderate”), 96.4 (“relatively high”) for Montgomery County. This information indicates that severe summer storms are exposing the population of Montgomery County to some risk from storm events. The index indicates an expected annual loss of \$7.9 million due to hail events, \$514,000 due to lightning events, and \$3.0 million due to strong wind events, with 3.8, 69.4, and 2.6 events occurring per year, respectively.

Property Damage

As described above, these events have caused an average of \$136 million in property damage and \$16,100 in crop damage annually. Due to the non-site-specific nature of this hazard, **Table 4.29** lists all structures within Montgomery County as having potential impacts from severe storms.

Loss of Life

There have been three deaths and 17 injuries in Montgomery County because of severe summer weather. There is always potential for injuries and fatalities during severe summer weather.

Economic Losses

Severe summer weather has the potential to damage infrastructure, resulting in the economic burden of clean up and repairs. Potential economic losses and damage associated with Montgomery County for hail, strong wind events, and lightning are recorded in **Tables 4.7.3 to 4.7.5** below. This table summarizes the population from 2020, building value, expected annual loss (EAL) for buildings, and expected annual loss (EALP) for population equivalence in Montgomery County. The top 20 most vulnerable census tracts according to FEMA’s National Risk Index are used for the calculations. EAL for buildings and population combine the totals from hail, strong wind events, and lightning. Compared with other hazards, severe summer weather has a rating of relatively low index rating, meaning that economic loss due to severe summer weather is relatively low for Montgomery County.

Table 4.7.3: Structure and Population Vulnerability from Hail

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
001501	\$0	\$207,714	\$120	\$207,834
030100	\$11	\$202,320	\$135	\$202,467
040406	\$46	\$154,661	\$223	\$154,930
040401	\$0	\$141,044	\$149	\$141,192
130102	\$650	\$111,037	\$198	\$111,885
080700	\$3	\$111,466	\$59	\$111,528
150100	\$1,741	\$100,313	\$176	\$102,230
140100	\$1,874	\$98,606	\$174	\$100,654
050503	\$4	\$100,371	\$178	\$100,552
050107	\$2	\$100,135	\$94	\$100,231
010200	\$0	\$97,703	\$212	\$97,915
110202	\$16	\$95,970	\$96	\$96,082
040306	\$13	\$93,758	\$159	\$93,930
100400	\$174	\$93,381	\$152	\$93,707
120101	\$446	\$93,110	\$149	\$93,705
090302	\$10	\$92,687	\$182	\$92,879
050504	\$24	\$92,252	\$184	\$92,459

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
165000	\$460	\$90,750	\$189	\$91,400
020400	\$0	\$89,830	\$196	\$90,027
040302	\$1	\$88,284	\$156	\$88,441
Total	\$5,475	\$2,225,390	\$3,183	\$2,264,048

Table 4.7.4: Structure and Population Vulnerability from Lightning

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040406	\$0	\$200	\$7,870	\$8,070
010200	\$0	\$123	\$7,234	\$7,357
090304	\$0	\$98	\$6,966	\$7,064
090302	\$0	\$123	\$6,574	\$6,697
165000	\$0	\$114	\$6,506	\$6,620
050504	\$0	\$117	\$6,338	\$6,455
130102	\$0	\$129	\$6,230	\$6,359
020400	\$0	\$105	\$6,234	\$6,339
002600	\$0	\$66	\$5,999	\$6,065
100101	\$0	\$102	\$5,951	\$6,054
050503	\$0	\$119	\$5,841	\$5,960
100102	\$0	\$102	\$5,801	\$5,904
050106	\$0	\$100	\$5,770	\$5,870
040405	\$0	\$101	\$5,692	\$5,793
040306	\$0	\$121	\$5,602	\$5,724
002500	\$0	\$52	\$5,642	\$5,693
140100	\$0	\$114	\$5,542	\$5,657
080500	\$0	\$79	\$5,486	\$5,565
080100	\$0	\$98	\$5,412	\$5,510
150100	\$0	\$112	\$5,343	\$5,456
Total	\$0	\$2,177	\$122,034	\$124,211

Source: FEMA National Risk Index

Table 4.7.5: Structure and Population Vulnerability from Strong Winds

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
001501	\$0	\$69,284	\$2,877	\$72,162
030100	\$0	\$67,485	\$3,239	\$70,724
040406	\$0	\$46,158	\$4,769	\$50,927
040401	\$0	\$42,094	\$3,177	\$45,271
130102	\$0	\$40,026	\$5,182	\$45,209
140100	\$0	\$35,384	\$4,412	\$39,796
080700	\$0	\$37,180	\$1,412	\$38,592
150100	\$0	\$34,092	\$4,248	\$38,341
010200	\$0	\$32,589	\$5,063	\$37,653
090302	\$0	\$30,916	\$4,362	\$35,279
100400	\$0	\$31,148	\$3,627	\$34,775
020400	\$0	\$29,963	\$4,692	\$34,655
120101	\$0	\$31,057	\$3,571	\$34,629
110202	\$0	\$32,011	\$2,296	\$34,308
050503	\$0	\$29,955	\$3,808	\$33,763
100101	\$0	\$28,831	\$4,400	\$33,230
125102	\$0	\$28,192	\$4,349	\$32,541
080100	\$0	\$27,973	\$4,037	\$32,010
050107	\$0	\$29,885	\$2,018	\$31,903
050504	\$0	\$27,532	\$3,925	\$31,458
Total	\$0	\$731,755	\$75,464	\$807,226

Source: FEMA National Risk Index

Future Trends

Land Use and Development Trends

Severe summer storms can occur anywhere. Any development that has occurred since the previous plan, and any future development, has the potential to be impacted by severe summer storms.

More buildings but less people can mean more property loss but less general population vulnerability. Similar median structure year built but older relative to today could mean more vulnerability to properties and inhabitants. Increase of people age 65+ from 2016 to 2022 could mean more vulnerability to summer storms. The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164. The population is expected to decrease by 0.006 percent, or 3,417 people by

2030. An additional decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with wildfires.

Climate Change

Preliminary research suggests that the frequency and intensity of severe thunderstorms could increase as the climate changes, according to the National Climate Assessment. A warming climate may also increase the number of days with conditions conducive to a severe thunderstorm. Future modeling techniques could reveal additional information about the correlation between atmospheric changes and severe thunderstorm formation and intensity.

4.8 Severe Winter Weather and Extreme Cold

Description

Severe winter weather includes winter storms, heavy snow, and extreme cold. Winter storms including blizzards are events that have heavy snow, sleet, ice, freezing rain, or high winds as their primary type of precipitation. While the precipitation itself is typically not dangerous, frozen roads and exposure to cold can cause death and injury.

A winter storm forms under the correct combination of three causes:

1. Below freezing temperatures in the clouds and near the ground, which are necessary to make snow and ice.
2. Lift, which raises the moist air from the clouds and causes precipitation. Warm air colliding with cold air and being forced to rise over the cold is an example of lift.
3. Moisture is needed to form clouds and precipitation. Air blowing across a body of water is a common source of moisture.

Winter storms are categorized by their type: blizzards, ice storms, lake effect storms, and snow squalls. Extreme cold events often accompany winter storms, bringing low temperatures and higher risks of frostbite and hypothermia.

- **Blizzards** are winter storms that are a combination of blowing snow and wind which lead to very low visibility. Heavy snowfalls and severe cold often accompany blizzards, but this is not required. Ground blizzards occur when strong winds pick up snow that has already fallen.
- **Ice Storms** occur when at least a quarter inch of ice accumulates on exposed surfaces. Roads and sidewalks can become dangerously slick, and trees and powerlines can easily break under the weight of accumulated ice.
- **Lake Effect Storms** are cold, dry air masses that move over the Great Lakes regions and drop the moisture as snow in the northeastern portion of Ohio near the Great Lakes area.
- **Snow Squalls** are brief, intense snow showers accompanied by strong winds. Impacts may be significant.
- **Extreme Cold Events** occur when temperatures drop below normal for the given area and they generally coincide with winter storms or are the lasting effect of a winter storm.

Location

Winter storms are typically large events that impact large areas at once. Winter storms will impact the entire County and have the potential to impact multiple counties.

Extent

The State of Ohio Hazard Mitigation Plan 2024 lists winter storms as one of the three highest threat hazards in Ohio. The average annual snowfall in Montgomery County is 12 to 24 inches according to NOAA, similar to the state average of about 27 inches. Snowfall typically occurs between November and April with January being the coldest month on average.

History

There have been at least 28 winter storm events, and another 124 winter weather events including heavy snow, extreme cold, wind chill, ice storm, and frost/freeze, in Montgomery County since January 1995, for a total of 152 severe winter weather events. These events caused \$626,000 in property damage and \$540,000 in crop damage according to The National Centers for Environmental Information (NCEI). A winter storm on January 6, 1996, caused two deaths, one in Montgomery County

and one in Miami County due to exposure. All severe winter weather and extreme cold events from 1995 to 2023 are summarized in **Table 4.8.1**, below:

Table 4.8.1: Severe Winter Related Events in Montgomery County since 1995

Severe Storm Event Type	Number of Events	Deaths	Injuries	Property Damage	Crop Damages
Blizzard	1	0	0	\$0	\$0
Cold/Wind Chill	1	0	0	\$100,000	\$0
Extreme Cold	2	0	0	\$0	\$0
Frost/Freeze	1	0	0	\$0	\$540,000
Heavy Snow	14	0	0	\$1,000	\$0
Ice Storm	5	0	0	\$0	\$0
Winter Storm	28	1	0	\$525,000	\$0
Winter Weather	100	0	0	\$0	\$0
Total:	152	1	0	\$626,000	\$540,000

Montgomery County has not had any disaster declarations for winter storms since the previous hazard mitigation plan. However, the County has been subject to one Emergency Declaration (ER) for snowfall since January 1995. Several of the most damaging events and/or events that resulted in deaths and/or injuries are described in more detail below.

Emergency Declaration for Winter Storm throughout Montgomery County on December 22, 2004:

A surface and upper-level low pressure center tracked Northeast across the Ohio Valley on December 22, 2004, and exited the region on December 23, 2004. A swath of heavy snow cut through Miami Valley. 24-hour storm totals in this narrow band exceeded two feet in Preble and Darke counties. Snowfall totals of 20 inches or more were found along a line generally running from the City of Eaton to the cities of Greenville, Piqua, Sidney, and Bellefontaine. Along and west of the I-71 corridor between the City of Cincinnati and the City of Columbus, over eight inches of snow fell. East of this line, warm air infiltrated the lower layers of the atmosphere and brought periods of freezing rain and sleet during the evening and overnight hours. Several communities in south central and central Ohio were crippled by power outages. Up to 236,000 electric customers were without power for several hours, some lasting up to a week before it was restored. An Emergency Declaration (EM-3198-OH) was issued on January 11, 2005, for 26 counties, including Montgomery County. Throughout Ohio, this event caused a reported \$25,000,000 in property damage. There are no reported property or crop damages in Montgomery County.

Extreme Cold throughout Montgomery County on February 1, 1996:

Arctic high pressure brought the coldest air of the season to the Ohio Valley in February 1996. The extreme cold was entrenched for five days, freezing, and bursting numerous water pipes. Throughout the Ohio Valley, there were at least two housefires indirectly related to the cold weather, as space heaters, which were thawing frozen water lines, caught on fire. Electricity outages were reported throughout Ohio AAA motor club had an extremely high number of calls during this cold wave when cars would not start. This event caused a reported \$100,000 in property damage.

Winter Storm throughout Montgomery County, January 6, 1996:

A blizzard developed near the Gulf Coast and moved up the East Coast in early 1996, bringing freezing temperatures and snowfall to most of Ohio. The additional snowfall resulted in \$500,000 in property

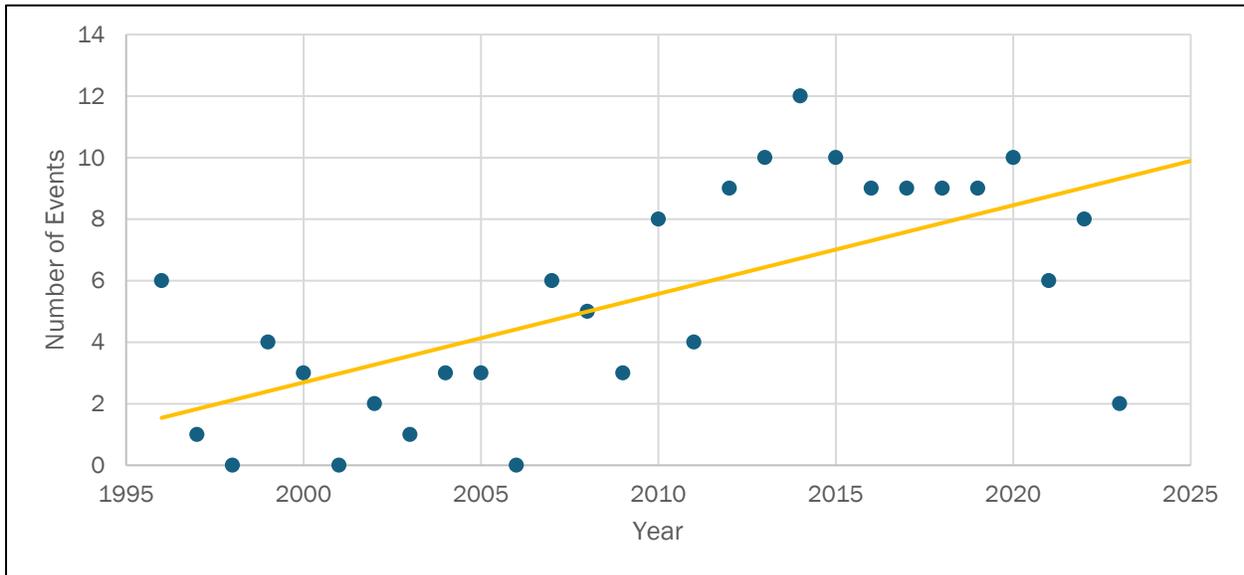
damage throughout Ohio, including in Montgomery County. Many businesses and homes had their roof collapse due to the weight of the new snow. A 76-year-old man died of exposure on his front porch in Montgomery County.

Probability

According to the NCEI, there have been a total of 152 winter storms and winter weather events reported in Montgomery County from January of 1995 to December 2023, with total losses amounting to \$626,000 in property damage and \$540,000 in crop damage. This amounts to approximately five winter storm events annually with average annual damages of \$41,642. In addition, according to the Fifth National Climate Assessment, due to the warming climate, extreme winter weather will be less severe and less frequent in Ohio, and heavy snowfall will manifest as heavy rainfall in future years. The Climate Change section in Future Trends discusses climate change further.

Figure 4.8.2 shows the trend of severe winter weather events over time between January 1995 and December 2025. The trend line slightly increases over the 28 years, illustrating a slight increase of winter weather activity in Montgomery County.

Figure 4.8.2: Severe Winter Weather Probability



Source: NOAA

Vulnerability Assessment

Infrastructure Impact

Winter storms can cause damage to overhead utilities. Wires can collapse under the weight of accumulated snow and ice leading to disruption in communication and power supply for days. Debris can block roadways or damage property as tree limbs can also collapse under the weight of accumulated snow and ice. Water pipes can be frozen under extreme low temperatures that may accompany severe winter storms. Roads and sidewalks can be blocked by the accumulation of snow, as well as being iced over. Bridges and overpasses are particularly dangerous because they freeze before other surfaces. Heavy snow fall and accumulation can cause business and private homes to have partial or full roof collapses.

Population Impact

All residents of Montgomery County are expected to be impacted by severe winter storms. Infants, older adults, sick people, and pets are more vulnerable to injuries and health conditions related to exposure to heavy snow, ice, and lasting extreme cold temperatures. It is advisable to equip vulnerable populations with indoor easy-to-read thermometers and heating devices in locations where they are highly visible.

For social vulnerability, according to the National Risk Index, cold wave, ice storm, and winter weather had scores of 60.2 (“relatively moderate”), 85.8 (“relatively high”), 92.2 (“relatively high”) for Montgomery County. This information indicates that severe winter weather events are exposing the population of Montgomery County to moderately high risk from winter storm events. The index indicates an expected annual loss of \$122,000 due to cold wave events, \$403,000 due to ice storm events, and \$465,000 due to winter weather events, with 0.7, 1.1, and 2.9 events occurring per year, respectively.

Property Damage

Property can be damaged by accumulated snow and ice, debris, and falling trees and utility poles. Extreme low temperatures can also freeze the water in pipes which could cause them to explode. All buildings in the County are exposed and vulnerable to winter storms. The State of Ohio Hazard

Mitigation Plan 2024 estimates annual potential losses due to damage caused by winter storms in Montgomery County to be \$1,271,752.

Property owners should weatherproof their homes and buildings and conduct regular inspections to eliminate impacts from extreme weather conditions. The Federal Emergency Management Agency (FEMA) suggests that individuals with damaged property should contact their insurance company and take photos of any damage. If individuals are uninsured or underinsured, they should seek assistance by visiting www.DisasterAssistance.gov.

Loss of Life

There was one reported death during the Blizzard of 1996 due to exposure in Montgomery. Likely causes of death are from iced-over and dangerous roads which lead to vehicular accidents, frostbite or hypothermia from prolonged exposure to cold, heart attacks from heavy snow shoveling, and carbon monoxide poisoning due to toxic fumes from heating sources.

A few ways to prepare and protect from extreme winter weather conditions include, but are not limited to, staying indoors and dressing warmly, staying off roads, avoid driving if already in a vehicle, equipping vehicles with an emergency supply kit, preparing for power outages and using heating devices intended for indoor use only, staying updated about emergency information and alerts, seeking medical assistance on signs of hypothermia or frostbite, and checking on neighbors.

Economic Losses

Economic losses can occur from businesses shutting down for potentially long periods of time. Economic activity can be completely halted during winter storms including transportation of goods and people. Electricity outages may lead to spoiled goods. Since winter storms occur during the winter season, damage to crops is unlikely but possible. Damaged buildings and pipes, fallen trees and power lines, and costs to repair damages and remove snow further impact the economy of cities and towns. **Table 4.8.3 to Table 4.8.5** shows the potential economic impacts if all structures within Montgomery County were damaged.

These tables summarize the expected annual losses (EAL) for agriculture, building value, and population equivalence, and the total expected loss in Montgomery County. The top 20 most vulnerable census tracts according to FEMA’s National Risk Index are used for the calculations.

Table 4.8.3: Structure and Population Vulnerability from Cold Wave

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
140100	\$7,086	\$175	\$705	\$7,967
150100	\$6,754	\$183	\$733	\$7,670
050600	\$4,731	\$164	\$647	\$5,541
130101	\$4,896	\$77	\$282	\$5,255
160100	\$3,336	\$74	\$235	\$3,645
130102	\$2,444	\$197	\$792	\$3,433
070101	\$2,422	\$94	\$443	\$2,959
165000	\$1,893	\$173	\$819	\$2,886
120101	\$1,779	\$172	\$626	\$2,577
110100	\$1,300	\$135	\$190	\$1,625

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
100400	\$693	\$172	\$635	\$1,501
040406	\$190	\$295	\$965	\$1,449
125000	\$485	\$106	\$781	\$1,372
100101	\$222	\$160	\$771	\$1,152
010200	\$0	\$180	\$887	\$1,068
050504	\$98	\$176	\$794	\$1,068
050106	\$156	\$154	\$738	\$1,048
115012	\$210	\$136	\$644	\$990
020400	\$1	\$166	\$822	\$989
030100	\$44	\$374	\$567	\$985
Total	\$38,741	\$3,363	\$13,076	\$55,180

Table 4.8.4: Structure and Population Vulnerability from Ice Storm

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040406	\$0	\$1,596	\$4,948	\$6,544
010200	\$0	\$952	\$4,437	\$5,389
165000	\$0	\$936	\$4,203	\$5,140
050504	\$0	\$952	\$4,072	\$5,024
020400	\$0	\$875	\$4,111	\$4,986
050503	\$0	\$1,036	\$3,950	\$4,986
030100	\$0	\$1,971	\$2,838	\$4,809
040405	\$0	\$881	\$3,914	\$4,795
040401	\$0	\$1,455	\$3,296	\$4,752
130102	\$0	\$991	\$3,741	\$4,732
090302	\$0	\$903	\$3,823	\$4,726
100101	\$0	\$842	\$3,855	\$4,697
090304	\$0	\$709	\$3,978	\$4,687
125102	\$0	\$823	\$3,811	\$4,635
050106	\$0	\$831	\$3,786	\$4,617
150100	\$0	\$951	\$3,633	\$4,585
001501	\$0	\$2,023	\$2,521	\$4,545



Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040306	\$0	\$967	\$3,533	\$4,500
125000	\$0	\$557	\$3,905	\$4,462
080500	\$0	\$681	\$3,763	\$4,444
Total	\$0	\$20,932	\$176,120	\$97,052

Source: FEMA National Risk Index

Table 4.8.5: Structure and Population Vulnerability from Winter Weather

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040406	\$998	\$6,181	\$1	\$7,180
010200	\$611	\$5,684	\$0	\$6,295
165000	\$586	\$5,251	\$14	\$5,850
020400	\$561	\$5,267	\$0	\$5,828
130102	\$667	\$5,074	\$17	\$5,758
050504	\$595	\$5,087	\$1	\$5,683
050503	\$648	\$4,935	\$0	\$5,582
090304	\$455	\$5,096	\$0	\$5,551
100101	\$540	\$4,939	\$2	\$5,481
090302	\$579	\$4,897	\$0	\$5,477
040405	\$551	\$4,889	\$0	\$5,440
125102	\$528	\$4,883	\$0	\$5,411
150100	\$620	\$4,696	\$48	\$5,365
125000	\$357	\$5,003	\$3	\$5,363
080500	\$437	\$4,821	\$0	\$5,258
050106	\$520	\$4,730	\$1	\$5,250
140100	\$594	\$4,520	\$51	\$5,165
100102	\$512	\$4,563	\$0	\$5,075
080100	\$524	\$4,533	\$0	\$5,057
040401	\$910	\$4,117	\$0	\$5,028
Total	\$11,795	\$99,164	\$139	\$111,098

Source: FEMA National Risk Index

Future Trend

Land Use and Development Trends

Winter storms can occur anywhere bringing an entire community or region to a standstill, including commuter and emergency transportation and medical services. Any development that has occurred since the adoption of the previous plan, and any future development, has the potential to be impacted by winter storms. All land uses are equally impacted by severe winter weather.

Building design and construction is also impacted by the amount of snowfall. Areas that receive high snowfall should have buildings designed to withstand the weight of the snow to avoid sagging, cracking, and collapsing roofs. On the other hand, snow is a natural insulator, and snow accumulated on rooftops helps hold heat in buildings and, consequently, reduces heating costs.

It is important to maintain consistency between emergency planning, financial plans and budgets, and development planning. Zoning codes should ensure that there is adequate greenspace in existing and new developments to foster drainage and offers space to pile cleared snow. Locating emergency facilities, and partnering with emergency organizations during the planning process, will help develop improved contingency responses in cases where emergency transportation and services are cut off during an extreme weather event.

The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164,000. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with severe winter weather.

Climate Change

According to the Midwest chapter of the Fourth National Climate Assessment, the average Midwest air temperature increased by more than 1.5 degrees Fahrenheit between 1900 and 2010. In recent years, however, warming has increased three times as quickly between 1980 and 2010. By the end of 2030, Ohio's climate may trend towards the climate of Southern Illinois. By 2100, Ohio might feel like Arkansas or Texas. As a result, the warming climate suggests that extreme winter weather will be less severe and less frequent in Ohio, and heavy snowfall will manifest as heavy rainfall in future years.

4.9 Tornadoes

Description

FEMA defines a tornado as “a violently rotating column of air extending from a thunderstorm to the ground.” Tornadoes can generate wind speeds greater than 250 miles per hour. Tornado paths can be as large as one mile wide and 50 miles long. Nationally, there is an average of 800 tornadoes reported annually across all 50 states.

In general, the midsection of the United States experiences a higher rate of tornadoes than other parts of the country because of the recurrent collision of moist, warm air moving north from the Gulf of Mexico with colder fronts moving east from the Rocky Mountains. Supercells, which form from rotating thunderstorms, are the most destructive type of tornado.

Tornado Warnings are issued by the Wilmington, OH Forecast Office when a tornado is indicated by the WSR-88D radar or sighted in person by spotters. The WSR-88D radar is an advanced Weather Surveillance Doppler Radar utilized by the NWS to generate a radar image. Once a warning has been issued, people in the warning area should seek shelter immediately. Warnings will include the location of the tornado, as well as what communities will be in its path. A tornado warning can be issued without a tornado watch, and they are typically issued for 30 minutes at a time. If the thunderstorm responsible for the formation of the tornado is also producing large volumes of rain, the tornado warning may be combined with a Flash Flood Warning. The NWS Office will follow up any Tornado Warnings with Severe Weather Statements to provide up-to-date information on the tornado and inform the public when the warning is no longer in effect (Source: NWS).

Location

Tornadoes can occur anywhere in Montgomery County. All areas and jurisdictions should be considered at risk for a tornado.

Extent

Tornadoes are measured by damage scale for their winds with greater damage equating greater wind speed. The original Fujita Tornado Damage Scale (F-scale) was developed in 1971 without much consideration to a structure’s integrity or condition as it relates to the wind speed required to damage it. The Enhanced Fujita-scale (EF-Scale) took effect on February 1, 2007. This scale starts with the original F-scale’s F0 through F5 ratings and classifies tornado damage across 28 different types of damage indicators. These indicators mostly involve building/structure type and are assessed at eight damage levels from 1 through 8. Therefore, construction types and their relative strengths and weaknesses are incorporated into the EF classification given to a particular tornado. The most intense damage within the tornado path will generally determine the EF scale given the tornado. **Table 4.9.1** lists the classifications under the EF- and F-scale. It should be noted that the wind speeds listed in this table are estimates based on damage rather than measurements.

There are no plans by the National Oceanic Atmospheric Administration (NOAA) or the National Weather Service to re-evaluate the historical tornado data using the enhanced scale. Therefore, this Plan and subsequent plans will reference both scales until a complete switchover is deemed necessary.

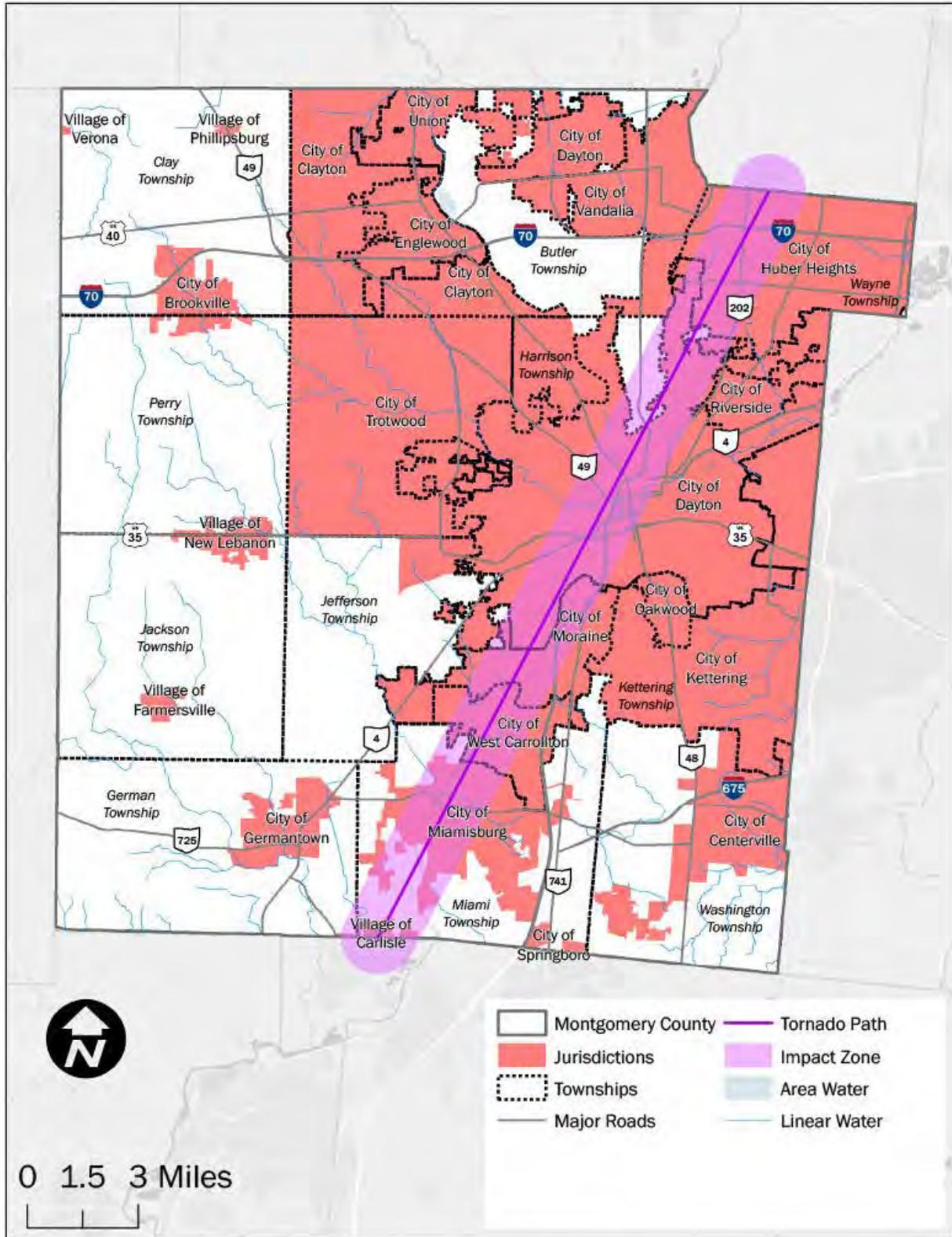
Figure 4.9.2 simulates an extremely destructive, worst-case scenario EF5 tornado and its impacts on Montgomery County assets and infrastructure. The worst-case scenario is simulated by running the EF5 tornado on a straight path through the most populated areas of the County. This theoretical scenario is performed to determine maximum potential damage within the County. The damages associated with this theoretical scenario are used to identify the County’s potential vulnerability to tornadoes (**Table 4.9.3**).

Table 4.9.1: Fujita and Enhanced Fujita Scale Classifications

Fujita Scale 3-Second Wind Gust (MPH)		Damage Levels	Enhanced Fujita Scale 3-Second Wind Gust (MPH)	
F0	45-78	Light Damage: Tree branches down.	EF-0	65-85
F1	79-117	Moderate damage: Roof damage.	EF-1	86-110
F2	118-161	Considerable damage: Houses damaged.	EF-2	111-135
F3	162-209	Severe damage: Buildings damaged.	EF-3	136-165
F4	210-261	Devastating damage: Structures leveled.	EF-4	166-200
F5	262-317	Incredible damage: Whole towns destroyed.	EF-5	Over 200

Source: SOHMP

Figure 4.9.2: Worst Case Tornado Scenario



History

There have been 13 tornado events in Montgomery County between March 1995 and July 2023 resulting in a total of \$504,485,000 in property damages. There was one indirect death caused during these events, with 174 overall injuries reported. Eight injuries occurred in the October 31, 2013, tornado and 166 occurred in the May 27, 2019, tornado. Average annual damages from 1995 to 2023 are approximately \$18,017,321 in property damages. The two tornado events in Montgomery County from 1995 to 2023 that caused the most damages and involved injuries are listed and described below. There has been one disaster declaration in Montgomery County in 2019.

A Major Disaster Declaration for Tornadoes in Montgomery County, May 27, 2019

An EF4 Tornado hit Montgomery County on Monday, May 27, 2019. The tornado initially touched down just west of Brookville and areas on the south side of Brookville sustained heavy damage, consistent with high-end EF2 wind speeds. Numerous homes suffered significant roof damage and removal, including exterior wall collapse and complete garage destruction. The tornado then carved a path east through Trotwood where damage consistent with EF2 wind speeds was widespread and some homes sustained damage consistent with EF3 wind speeds. Structures here again featured roof removal and exterior wall collapse. Areas near Riverside Drive and the Stillwater River exhibited damage consistent with wind speeds of 170 mph, or lower-end EF4 damage. This damage included well-built apartment buildings that sustained complete roof and exterior wall removal. In addition, significant tree devastation was found along the Stillwater River, east of Riverside Drive, that included numerous trees that were debarked and nubbed down to the trunk. The tornado continued southeast through Dayton and Northridge and crossed I-75 into the Old North Dayton Area, where heavy damage continued to homes and businesses. As the tornado entered Riverside, damage began to lessen in intensity, but plenty of damage consistent with EF1 wind speeds was noted. The tornado continued further to the southeast, causing damage in a subdivision north of Burkhardt Road. An 86-year-old woman died (indirect) on September 1st, 2019, in part due to injuries suffered when she was trapped in her home during the tornado. A Major Disaster Declaration (DR-4447-OH) was issued on June 18, 2019, for 12 counties, including Montgomery County. Overall, the tornado caused \$500,000,000 in property damage for Montgomery County and 166 injuries were reported.

An EF1 Tornado in the City of Vandalia, October 31, 2013:

An EF1 tornado hit the City of Vandalia on Thursday, October 31, 2013. The tornado touched down just northeast of Interstate 75 at Highway 40, exit number 63 in Vandalia. Initial damage consisted of the collapse of a cinderblock drive through store, and significant destruction of the roof and some of the cinderblocks on an uninhabited commercial building. The tornado continued on to a restaurant, in which the windows were blown in and significant façade and roof damage occurred. Eight people inside the restaurant sustained minor injuries from the glass. The tornado continued into a residential subdivision, where at least three homes sustained damage which rendered them uninhabitable. There were additional homes with partial wall collapses, and more than half the roof was removed. Based on the damage surveyed, the maximum wind speed of this tornado was estimated to be between 100 and 110 miles per hour. Overall, the tornado caused \$2,000,000 in property damage for Montgomery County and eight injuries were reported.

Probability

There have been 13 tornado events in Montgomery County between March 1995 and July 2023 resulting in a total of \$504,485,000 in property damages. Average annual damages amount to about \$18,017,321.

There were no recorded tornadoes between 1995 and 2006. Between 2006 and 2021, the annual rate for tornadoes in Montgomery County has been about one tornado every two years. However, when conditions are right, there may be multiple tornadoes in one year or one storm.

Although it is difficult to predict future tornado activity, a study completed in 2018 on spatial trends of tornadoes saw an eastward shift in tornado frequency. Two other studies (2015 and 2016) showed an increase in tornado frequency in the eastern United States and a decrease in tornado activity in central United States. The study published in 2016 on spatial redistribution of tornado activity stated that there is a documented increase in hazardous conductive weather (HCW) in the lower Ohio valley regions. The studies do note that the number of tornadoes produced from a single storm are increasing. For instance, in 2020 there were 20 documented tornadoes in Ohio, seven from one storm and five from another.

Vulnerability Assessment

Infrastructure Impact

Above-ground infrastructure can be damaged by tornadoes. Debris caught in tornadoes as well as fallen trees can cause damage to buildings and infrastructure. Debris can lead to closure. Above ground utility infrastructure can be damaged or destroyed, which can cause service outages.

Population Impact

Tornadoes are random in nature and have the potential to occur anywhere in the County. Everyone within the County should be prepared for a tornado. Residents in mobile home parks are particularly vulnerable and should have a plan in place.

For social vulnerability, according to the National Risk Index, tornadoes and strong winds have a score of 81.8 (“relatively moderate”) and 92.0 (“relatively moderate”) in Montgomery County. Tornadoes that have occurred in Montgomery County are typically weaker tornadoes, rated EF-2 or lower. The index indicates an expected annual loss of \$2.9 million due to strong wind and \$7.5 million due to tornadoes, with 2.6 and 0.3 events occurring per year, respectively.

Property Damage

Tornadoes can cause significant damage to buildings and properties. In the last 28 years the property damage in Montgomery County is related to major structural damage to businesses and homes, roof damage, siding damage, and extensive tree damage. The average amount of property damage is \$471,250 per tornado (excluding the May 2019 tornado that caused \$500,000,000 in damages alone). Eight of the tornadoes that hit Montgomery County resulted in over \$100,000 in property damage.

Loss of Life

There has been one indirect reported death and 174 injuries because of tornadoes in Montgomery County since 1995. Loss of life and injuries are always possible during tornadoes. Falling debris is the main the cause of death in a tornado, along with becoming airborne.

Economic Losses

Tornadoes can cause major damage to structures and roads. Higher severity tornadoes have the potential to destroy structures. Debris also has the potential to cause damage to structures by breaking windows, damaging walls, or falling directly onto buildings and above-ground infrastructure. Potential economic losses and damage associated with Montgomery County for tornadoes are recorded in **Table 4.9.3** below.

This table summarizes the population from 2020, building value, expected annual losses (EAL) for buildings, and expected annual loss (EALP) for population equivalence in Montgomery County. The top 20 most vulnerable census tracts according to FEMA’s National Risk Index are used for the calculations. Compared with other hazards, tornadoes have a relatively moderate index rating, meaning that economic and population loss due to tornadoes is moderate for Montgomery County.

Damage to utilities and roadways may also cause economic damage due to business closures, destruction of goods that require electricity, and the halt of economic activity.

Table 4.9.3: Structure and Population Vulnerability from Tornado

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040406	\$69,094	\$64,803	\$3	\$133,900
030100	\$78,801	\$37,474	\$1	\$116,276
01501	\$80,902	\$33,291	\$0	\$114,193
130102	\$49,619	\$62,518	\$46	\$112,182
40401	\$63,011	\$43,172	\$0	\$106,183
010200	\$38,054	\$58,585	\$0	\$96,639
050503	\$44,840	\$51,739	\$0	\$96,579
140100	\$43,719	\$52,530	\$131	\$96,381
165000	\$40,542	\$55,053	\$34	\$95,630
050504	\$41,213	\$53,335	\$2	\$94,550
150100	\$42,627	\$50,613	\$123	\$93,363
040405	\$38,135	\$51,260	\$0	\$89,396
020400	\$34,988	\$54,283	\$0	\$89,271
040306	\$41,889	\$46,269	\$1	\$88,160
090302	\$36,113	\$50,475	\$1	\$86,588
050106	\$35,962	\$49,591	\$3	\$85,556
040302	\$39,544	\$45,367	\$0	\$84,911
100101	\$33,665	\$50,905	\$5	\$84,575
125102	\$32,919	\$50,323	\$1	\$83,243
040303	\$36,595	\$44,786	\$0	\$81,381
Total	\$922,234	\$1,006,372	\$351	\$1,928,957

Source: FEMA National Risk Index

Future Trends

Land Use and Development Trends

Tornadoes can occur anywhere. Any development that has occurred since that previous plan and any future development has the potential to be impacted by tornadoes. While the location of development will not be impacted by tornadoes, shelters should be installed in high occupancy buildings, parks, fairs and festivals, mobile home parks, and similar developments.

More buildings but less people can mean more properties potentially exposed in a tornado event but generally less population vulnerability. Similar median structure year built but older relative to today could mean more vulnerability to properties and inhabitants. The current total value of taxable real

estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164,000. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with tornadoes.

Climate Change

While rainfall, heat, and drought have clear links to climate change, the link between climate change and tornadoes is not yet fully understood. Tornado records in the United States are often only available starting during the 1950s. This limited data set makes it difficult to compare trends over long periods of time. Additionally, tornado reporting was not fully standardized until 2007, when the Enhanced Fujita Scale was released.

However, some short trends have been identified, although not yet linked directly to climate change. The number of days with tornadoes in the United States has fallen, but tornado outbreaks, or the number of tornadoes in one day, have increased. The density and strength of tornadoes has also increased. Finally, tornado distribution has shifted eastwards, which includes a move towards Ohio (Center for Climate and Energy Solutions).

According to the Fifth National Climate Assessment, severe storms are brief and cover small areas, thus the effects of climate change are difficult to measure. It is known that tornado activity has become more variable, with a decrease in the number of days per year with tornados but an increase in the number of tornadoes that occur on these days. In general, there is some indication that the frequency and intensity of thunderstorms will increase in a warmer climate. However, the effect on tornadoes is unclear.

4.10 Wildfire

Description

A wildfire is an uncontrolled fire that burns in a natural area of combustible vegetation such as a forest, grassland, or prairie, and typically occurs in rural areas. Non-wilderness fires are uncontrolled burning in residential or commercial development that are out of the scope of this plan, however, it is important to note that non-wilderness fires often accidentally cause wildfires. They can happen at any time or place and more than half of the wildfires recorded have been started due to human activity. While wildfires can be caused by human activity or a natural phenomenon such as lightning, it is often the weather conditions that determine how much a wildfire grows.

Location

According to the State of Ohio Hazard Mitigation Plan (SOHMP), Montgomery County is not within the ODNR Division of Forestry's Expanded Forest Fire Protection Area. Counties within this region tend to have abundant forested lands and grasslands and, as such, represent the area of highest wildfire risk and hazard in Ohio. Montgomery County is within region 2. The Ohio Wildfire Hazard Level is included in **Figure 4.10.1**. This assessment identifies wildfire risk level by township and classifies all townships in Montgomery County as low risk for wildfires or has not been assessed.

Extent

Several factors can contribute to the escalation of risk of wildfires, including the prevalence of forests and agricultural lands and their proximity to homes, residences, and structures, as well as the distance between fire and emergency management services. In these cases, the presence of fire near structures causes fire departments to shift focus away from fire suppression and towards structure protection.

According to the SOHMP, 99.9 percent of wildfires in Ohio are caused by human action or accident. As such, many wildfires in Ohio burn in proximity to homes and structures. From 1997 to 2017, the main causes of wildfires in Ohio included debris burning, incendiary (arson), equipment, smoking, campfires, children (playing with matches), lightning, and railroad.

History

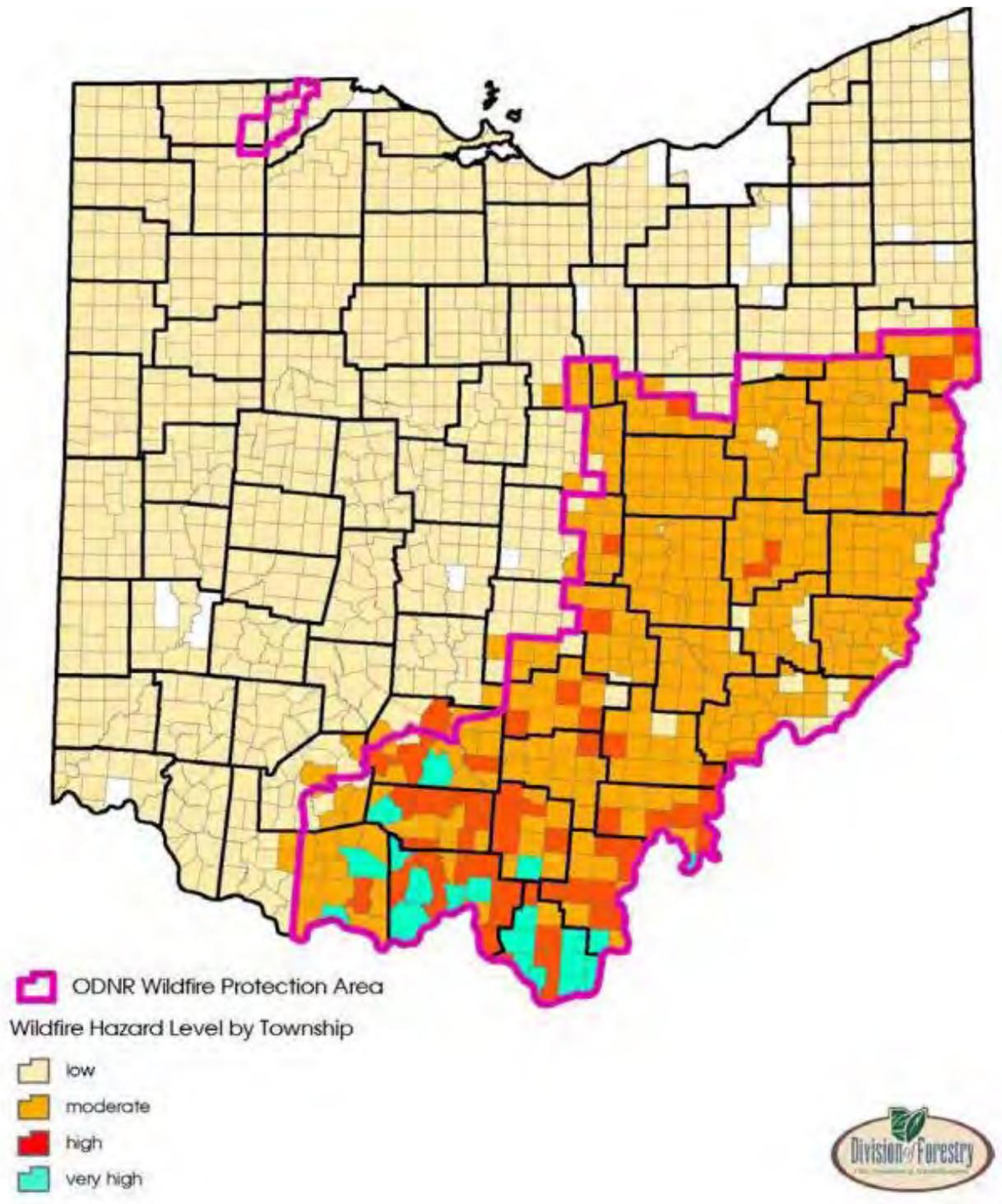
The SOHMP identifies 26 total fire events from January 1, 2018, to December 31, 2022, which averages 5.4 events annually. These events burned a total of 24 acres with an average of 0.94 acres per event.

Estimating the monetary losses associated with wildfires is difficult because most of these events occur on open land or fields with monetary losses often not being recorded. This lack of data may result in inconsistencies if an analysis was done based on reported monetary loss. As such, acres burned per fire event is a more consistent method of analysis for this hazard.

Probability

According to the State of Ohio Hazard Mitigation Plan, there is a 100 percent probability that a wildfire will occur within any county in any given year. Since 26 fire events occurred in Montgomery County from January 1, 2018, to December 31, 2022, an average of 5.2 fire events are estimated to occur annually in the County. In addition, according to the U.S. EPA, the average total area burned by wildfires has increased since the 1980s, and the record-breaking fires tend to occur during record-breaking warm years. The Climate Change section in Future Trends discusses climate change further.

Figure 4.10.1: Ohio Wildfire Hazard Level



Source: ODNR Ohio Division of Forestry

Vulnerability Assessment

Infrastructure Impact

There is a low risk that wildfires in Montgomery County will impact infrastructure. Wildfires will most likely impact the County through minor property and crop damage. Additionally, there are currently 67 state-owned and state-leased critical facilities located within Montgomery County, as determined by ODNR. All 67 of these facilities are located within a low wildfire risk area or an area that has not been evaluated and have a value of approximately \$184,208,998.

Population Impact

Figure 4.10.1 shows the Ohio Wildfire Hazard Level, which indicates wildfire hazard level by township. On average, there is a low risk of wildfires occurring in Montgomery County. Accordingly, there is a low risk of impact on the population. If a wildfire would occur within the County, the population could be impacted by loss of homes and crops.

For social vulnerability, according to the National Risk Index, wildfires have a score of 62.6 (“very low”) in Montgomery County. The wildfires that have occurred in Montgomery County have only had some impacts on properties and crops. The index indicates an expected annual loss of \$93,000 due to wildfires with a less than 0.001 percent change of wildfire event occurring per year.

Property Damage

There were 26 recorded wildfire events between 2018 and 2022 in Montgomery County. It is assumed that the County has experienced some property and crop damage because of wildfires. Occasionally, in the event of a wildfire, fire engines belonging to local fire departments can be damaged while suppressing wildfires, although there are no reports of this in Montgomery County.

Potential economic losses and damage associated with Montgomery County for Wildfire according to FEMA’s National Risk Index are recorded in Table 4.10.2 below.

Table 4.10.2: Structure and Population Vulnerability from Wildfire

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
040406	\$3,906	\$265	\$0	\$4,172
050600	\$2,304	\$200	\$1	\$2,504
100400	\$2,236	\$133	\$0	\$2,369
110201	\$2,032	\$162	\$0	\$2,194
040303	\$1,998	\$184	\$0	\$2,182
110100	\$2,049	\$88	\$0	\$2,137
120101	\$1,987	\$136	\$0	\$2,123
040306	\$1,838	\$139	\$0	\$1,977
150100	\$1,840	\$135	\$0	\$1,976
130102	\$1,797	\$149	\$0	\$1,946
140100	\$1,767	\$162	\$0	\$1,930
165000	\$1,751	\$163	\$0	\$1,915
100101	\$1,672	\$165	\$0	\$1,837

Census Tract	Expected Annual Loss (Agriculture)	Expected Annual Loss (Building)	Expected Annual Loss (Population Equivalence)	Expected Annual Loss (Total)
125104	\$1,742	\$83	\$0	\$1,824
110202	\$1,648	\$97	\$0	\$1,745
090302	\$1,603	\$141	\$0	\$1,745
115012	\$1,556	\$139	\$0	\$1,695
040401	\$1,561	\$102	\$0	\$1,663
040305	\$1,531	\$115	\$0	\$1,646
050504	\$1,483	\$127	\$0	\$1,610
Total	\$38,302	\$2,886	\$2	\$41,190

Source: FEMA National Risk Index

Loss of Life

Montgomery County has no recorded wildfire events resulting in loss of life, so it is unlikely that loss of life will result from wildfires. However, with any wildfire event, there is potential for loss of life. Advanced evacuation warnings can reduce the likelihood of death because of wildfires.

Economic Losses

Wildfires have the potential to damage agricultural crops and tree plantations, which can result in economic losses. Refer to **Figure 1.2.2** (Land Cover map) in Chapter 1 to see the distribution of forests, hay/pasture, and cultivated crops which are at risk to wildfires.

Future Trends

Land Use and Development Trends

Communities should monitor areas that are especially susceptible to wildfires and avoid development in such areas. New developments in these areas should implement fire protective measures. Slight increase in forested and pasture/hay areas can mean slightly more vulnerability to wildfire. If newer structures are built closer to the Wildland Urban Interface, it could result in increased vulnerability to the structures and inhabitants.

The current total value of taxable real estate in Montgomery County is \$10,386,064,700. In 2022, Montgomery County authorized 1,343 new residential units at a total value of \$268,164. The population is expected to decrease by 0.006 percent, or 3,417 people by 2030. An additional decrease of 4.7% is expected by 2040. Given these estimates, there are no known changes in risks associated with wildfires.

Climate Change

According to the U.S. EPA and National Climate Assessment, the national average total area burned by wildfires has increased since the 1980s, and the record-breaking fires tend to occur during record-breaking warm years. Combustion from wildfires also releases carbon dioxide into the atmosphere, contributing to climate change and negatively impacting human health. If climate change increases the frequency and intensity of drought in the region, then the risk of wildfire can also increase.

5 | Hazard Mitigation Strategy

5.1 Hazard Mitigation Strategy

Hazard Priorities

Potential hazards, including natural, geological, and human-caused hazards, were rated by members of the Core Planning Committee, which included representatives from each jurisdiction in Montgomery County. Each potential hazard was rated on a scale of zero to five, with zero indicating the hazard should not be studied and five indicating the most significant threat to the representative’s jurisdiction. A priority score was developed for each hazard by averaging the representatives’ ratings. The hazards were then ranked by their priority score, where the highest priority score was given a hazard rank of one. The resulting hazard rank and associated priority score for each hazard are shown in **Table 5.1.1**.

Table 5.1.1: Hazard Priorities

Hazard	Priority Score	Hazard Rank
Multiple Hazards (Included more than one listed hazard event)	5.00	1
Tornadoes	4.28	2
Flooding	3.32	3
Severe Summer Weather	3.12	4
Severe Winter Weather	3.08	5
Epidemic	2.64	6
Dam/Levee Failure	2.56	7
Extreme Temperatures	2.48	8
Invasive Species	1.96	9
Drought	1.80	10
Earthquakes	1.32	11
Landslides and Land Subsidence	1.28	12
Wildfires	1.00	13

Hazards Not Assessed

Below is a discussion covering hazards that were not included in this Plan update, as compared to the hazards included in the SOHMP and in Montgomery County’s previous 2019 HMP.

Coastal Erosion

Coastal erosion is a hazard that is not applicable to Montgomery County due to the County’s inland location, so it was not assessed.

Hurricanes/Tropical Storms

Hurricanes/tropical storms are hazards that are not directly applicable to Montgomery County due to the County’s inland location, so they were not assessed. However, if remnants of hurricanes or tropical storms were experienced as thunderstorms, thunderstorm winds, or high/severe winds, those events were included in the severe summer storms and/or tornado assessments.

Seiche/Coastal Flooding

Seiche/coastal flooding is a hazard that is not applicable to Montgomery County due to the County's inland location, so it was not assessed.

5.2 Hazard Mitigation Goals

Developing achievable goals forms the foundation for all mitigation actions and activities that will aid Montgomery County in attaining the overall mission of the Core Planning Committee. As such, the Core Planning Committee and participating jurisdictions assessed the goals of the 2019 Hazard Mitigation Plan and updated them for this Plan update. Goals were established and reviewed based upon their relationship to the hazard priorities and potential adverse impact of those hazards upon the community. The goals, as well as the hazards assessed for this Plan, informed the development of actions that the County and participating jurisdictions can take to mitigate the impacts of the hazards. The goals of the Montgomery County Hazard Mitigation Plan are as follows:

- Goal 1: Educate the public on problem areas, encouraging communities to recognize the identified hazards for future planning.
- Goal 2: Encouraging both public and private groups to mitigate prior to disasters and encouraging mitigation after disasters to prevent re-occurrence.
- Goal 3: Identifying practical mitigation solutions for identified hazards.
- Goal 4: Identifying possible prevention and reduction projects.
- Goal 5: Requesting project ideas from the communities as well as plans which address mitigation issues.

Hazard Mitigation Actions & Priorities

Members of the Core Planning Committee completed a Previous Mitigation Action Status survey, which indicated the status of mitigation actions included in the 2019 Hazard Mitigation Plan. This survey asked representatives to indicate whether the mitigation actions from the previous plan were completed, deleted, deferred, unchanged, or ongoing. It also asked the representative if the mitigation action should be included in this Plan update. The final results are included in **Appendix B**. In addition, new mitigation actions were developed and considered for inclusion in this Plan update that address gaps in the previous plan or new issues that have arisen since the 2019 Plan.

All new and old mitigation actions were reviewed and rated by members of the Core Planning Committee and local jurisdictions based on five criteria: cost-effectiveness, technical feasibility, environmentally soundness, immediate need, and total risk reduction. For each action, each of the five criteria were rated on a scale of one to five (low to high). All the surveys were collected and the individual criteria for each mitigation action were averaged and then added together to develop a single raw score for each individual mitigation action. The raw score for each action was used in combination with the rankings of the associated hazard, as determined by the Hazard Priority Survey (**Table 5.1.1**), to develop a score for each mitigation action. The action scores were then ranked to indicate the priority of each specific action. The action with the highest action score was given an action priority of one, indicating that action was the highest priority. Hazard Mitigation Action priorities are organized by hazard in **Table 5.2.1**. The information used to develop the priorities from the jurisdictions surveys and comments can be found in **Appendix G**, along with all completed surveys that were used to prioritize the hazards and develop the goals.

Mitigation projects will only be implemented if the benefits outweigh the associated cost of the proposed project. The Core Planning Committee, in coordination with the Montgomery County EMA, performed a general assessment of each action that would require FEMA funding as part of the

planning process. A detailed cost-benefit analysis of each mitigation action will be required during the project planning phase in order to determine the economic feasibility of each action. Projects will also be evaluated for social and environmental impact-related feasibility, as well as technical feasibility and any other criteria that evaluate project effectiveness. This evaluation of each project will be performed during the pre-application phase of a grant request. Project implementation will be subject to the availability of FEMA grants and other funding sources, as well as local resources.

Projects that are determined to be infeasible during this review process will be re-evaluated by members of the Core Planning Committee for re-scheduling or deletion.

Table 5.2.1: Mitigation Actions Priority Table by Hazard

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Dam and Levee Failure</i>								
1	Ensure all eligible jurisdictions are participating in the NFIP.	City of Englewood, City of Miamisburg, City of Trotwood	1	9	Mayors of Jurisdictions	Existing Budget, FEMA HHPD	11/2024 - 11/2029	New
2	Ensure all high-hazard potential dams have updated Emergency Action Plans (EAPs) in place.	City of Englewood, City of Miamisburg, City of Trotwood	7	67	Mayor of Jurisdictions	(USACE) Flood Control Program, FEMA HHPD	11/2024 - 11/2029	New
3	Identified the need to construct a water retention basin for the Chardonay housing development to alleviate flooding problems in this neighborhood.	City of Centerville	7	79	Mayor of Centerville	(USACE) Flood Control Program, FEMA HHPD	11/2024 - 11/2029	Previous
4	Obtain or create inundation maps for all dams.	City of Englewood, City of Miamisburg, City of Trotwood	7	77	Mayors of Jurisdictions	Existing Budget, FEMA HHPD	11/2024 - 11/2029	New
5	Perform engineering analysis, engineering design, system monitoring, and construction activities for existing dam and levee structures to reduce potential risk of failure. As of now, three dams have been identified for funding, these are Germantown, Englewood, and Taylorsville dams located in Montgomery County, Ohio.	Miami Conservancy District	7	71	Miami Conservancy District	(USACE) Flood Control Program, FEMA HHPD	11/2024 - 11/2029	Previous
<i>Drought</i>								
6	Commission a study to determine the best course of action to accomplish a drought resilience wellfield project.	City of Dayton	10	72	Mayor of Dayton	Existing Budget	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Flooding</i>								
7	31 storm drainage ditches and water ways have been identified as at-risk structures in need of maintenance due to local flooding	Montgomery County	3	37	Montgomery County Soil & Water Conservation District Technician	(FMA) Grant Program	11/2024 - 11/2029	Previous
8	Allen Plat – The Allen Plat area is outside of the levee that was built to protect West Carrollton following the 1913 flood of the Great Miami River. The area consists of approximately 122 houses and some businesses. This area is subject to flooding from the Great Miami River and needs a levee system to protect it from flooding. The properties in this area are within the one-hundred-year flood plain and owners are currently paying flood insurance. The City of West Carrollton has been in contact with the U.S. Army Corps of Engineers concerning this matter and the Corps is in the proposing to conduct a feasibility study for constructing flood protection for Allen Plat.	City of West Carrollton, Miami Township, City of Moraine, Miami Conservancy District	3	41	West Carrollton Mayor, Miami Township Trustees, Moraine Mayor, Miami Conservancy District	(FMA) Grant Program	11/2024 - 11/2029	Previous
9	Channel clearing near bridge abutments (Big and Little Twin).	City of Germantown	3	38	Germantown Administration and German Township Board of Trustees	Existing Budget	11/2024 - 11/2029	Previous
10	Develop a floodplain management plan to reduce the loss of life and property damage; plan for evacuation and flood fighting; and create public risk awareness of potential flooding in protected areas of dams and levees including possible failure areas.	Miami Conservancy District	3	39	Miami Conservancy District	(FMA) Grant Program	11/2024 - 11/2029	Previous
11	Develop Flood Alert Emergency System (e.g. Flood warning text messages).	Miami Conservancy District	3	81	Miami Conservancy District	Existing budget	11/2024 - 11/2029	New
12	Eliminate and address stream bank erosion through planning and infrastructure development	City of Germantown	3	42	Mayor of Germantown	Existing Budget	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
13	Holes Creek – This project is already underway by the U.S. Army Corps of Engineers and should be completed within the next year or two. This project involves the flood protection along Holes Creek. The area south of the creek has already been protected; however, the Corps of Engineers is seeking additional congressional funding to complete protection for the area on the north side of the creek. Senator Mike DeWine indicated that it appears the funding is progressing smoothly through Congress for this project.	Montgomery County	3	43	Mayor of West Carrollton, Mayor of Moraine, Miami Township Trustees	Existing Budget	11/2024 - 11/2029	Previous
14	Identified need for storm water drainage in Brant Pike area. Scope of project to be completed in conjunction with the City of Riverside and the Miami Conservancy District.	City of Dayton, City of Riverside	3	44	Dayton Mayor	Existing Budget	11/2024 - 11/2029	Previous
15	Identified need for the construction of an elevated well in the well head area which is located within the 100-year flood plan	City of Germantown	3	45	Germantown Administration and German Township Board of Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
16	Identified the need for a drainage project to alleviate some flooding problems in the area of Rahn Road and Grantland Drive.	Washington Township	3	46	Washington Township Trustees	Existing Budget	11/2024 - 11/2029	Previous
17	Identified the need for storm water drainage in the following areas: Webster Street south of Needmore Rd., Eldorado Plat (Edgewater and Earlwood Area), Shiloh Dr. and Blue Ridge, Keats St. and Keenan St., Walbrook Ave. and Nottingham Rd.	Harrison Township	3	47	Harrison Township Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
18	Identified the need to construct a storm drainage sewer system.	City of Clayton	3	48	Clayton Mayor	Existing Budget	11/2024 - 11/2029	Previous
19	Identified the need to purchase a water pump for the lift station at Hemple Road. Installation of a monitoring system for the water tower	Village of Farmersville	3	49	Mayor of Farmersville	(FMA) Grant Program	11/2024 - 11/2029	Previous
20	Identify properties along Wolfcreek that are flood hazards.	City of Brookville	3	83	City of Brookville City Manager	(FMA) Grant Program	11/2024 - 11/2029	New
21	Identify locations prone to flooding such as creeks and drainage areas located in the City of Englewood. Clear debris and obstructions along these areas to reduce flooding and improve water flow.	City of Miamisburg	3	63	Mayor of Miamisburg	Existing Budget	11/2024 - 11/2029	New



2024 Montgomery County Natural Hazard Mitigation Plan

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
22	Improve storm drainage systems in the Hillside neighborhood	City of Trotwood	3	50	Mayor of Trotwood	(FMA) Grant Program	11/2024 - 11/2029	Previous
23	Installation of a storm drainage system to be built in the area bordered by: New Lebanon Municipal Limits on the south, Diamond Mill Road on the east, Little Richmond Rd. on the north, and Johnsville-Brookville Pike on the west.	Perry Township	3	40	Perry Township Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
24	Main St. Flood Mitigation Project	City of Moraine	3	51	Moraine Fire Chief	(FMA) Grant Program	11/2024 - 11/2029	Previous
25	Multiple properties have been identified as repetitive flood insurance loss properties. This project would enable Harrison Township to purchase all properties in Eldorado plat and demolish them due to chronic river flooding.	Harrison Township	3	52	Harrison Township Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
26	One property has been identified as a repetitive flood insurance loss property in Butler Township near the intersection of Kinmont Road and Frederick Pike.	Butler Township	3	53	Butler Township Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
27	One property has been identified as a repetitive flood insurance loss property in Harrison Township near the intersection of Cypress Drive and N. Birch Drive.	Harrison Township	3	54	Harrison Township Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
28	One property has been identified as a repetitive flood insurance loss property in Perry Township near the intersection of Thornapple Road and US 35.	Perry Township	3	55	Perry Township Trustees	(FMA) Grant Program	11/2024 - 11/2029	Previous
29	One property has been identified as a repetitive flood insurance loss property in Washington Township near the intersection of Yankee and Mad River Rd.	Washington Township	3	56	Washington Township	(FMA) Grant Program	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
30	Owl Creek Watershed – The Owl Creek watershed is a 4.7 sq. mile area that includes a portion of West Carrollton/Miami Township and a portion of the city of Miamisburg. This area runs from the Great Miami River upward toward the Dayton Mall. The City of West Carrollton and Miami Township have recently entered into an agreement with the Miami Conservancy District for a hydrological and hydraulic study of the watershed to determine what measures can be taken to reduce flooding within the watershed. Columbus, DLZ Engineering, has been selected for that work, and the contract has been entered into with the firm to complete this work. The cost of the study is approximately \$40,000. The study is to be completed in December of this year. Once this study is completed, the city will have a better understanding of what level of flood protection can be completed, the associated costs, and in essence what is feasible to do within this watershed to reduce the risk of flooding. The goal is to remove people from the one-hundred-year flood plain who are currently paying the FEMA flood insurance rates, which are very high and detract from property values. There are approximately 410 houses subject to flooding from Owl Creek within our city.	City of West Carrollton, Miami Township, City of Miamisburg, Miami Conservancy District	3	64	Mayor of West Carrollton, Miami Township Trustees, Mayor of Miamisburg; Miami Conservancy District	(FMA) Grant Program	11/2024 - 11/2029	Previous
31	Provide educational programs promoting storm water management best practices for the homeowner to the public.	Harrison Township	3	57	Harrison Township Trustees Township	Existing Budget	11/2024 - 11/2029	Previous
32	Replace gate system and install flood warning sign on Rip Rap Road	City of Huber Heights	3	58	Huber Heights Fire Department	Existing Budget	11/2024 - 11/2029	Previous
33	Several properties have been identified as a repetitive flood insurance loss property in Montgomery County.	Montgomery County	3	59	MCOEM, Jurisdictional Representatives	(FMA) Grant Program	11/2024 - 11/2029	Previous
34	Several properties have been identified as a repetitive flood insurance loss property in the City of Brookville which are the apartment units 306-312 Wolf Creek, Brookville.	City of Brookville	3	78	Mayor of Brookville	(FMA) Grant Program	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
35	Several properties have been identified as repetitive flood insurance loss property in the Village of Phillipsburg. The property addresses are 31, 33, 35, 37 East Main Street and 12, 20 and 38 East Poplar St. in Phillipsburg.	Village of Phillipsburg	3	60	Mayor of Phillipsburg	(FMA) Grant Program	11/2024 - 11/2029	Previous
36	There are 110 properties located in either the floodway or floodplain areas designated within the Wiles Creek neighborhood. Of the 110 properties, 45 are located within the floodway of the South Blvd creek, and 8 are located within the floodway of the Middle Branch of the Little Beaver Creek. Several of the homes have experienced years of flood damage approximately once every 10-15 year. Within the past 5 years, the city has purchased multiple homes in the floodway area adjacent to the Middle Branch Creek from willing sellers. The homes have been demolished and the area will remain open space. The 8 remaining homes along the floodway of the Middle Branch of the Little Beaver Creek remain the City's top priority for acquisition and demolition. The eventual goal is to have all structures removed from the floodways of both creeks within the Wiles Creek neighborhood in order to restore both creek channels to their natural state. Property acquisition will depend on the availability of funds and the willingness of property owners to sell their property to the City. The estimated cost of acquisition and demolition of the 8 properties along the Middle Branch floodway is \$800,000. The estimated cost of acquisition and demolition of the 45 properties along the South Blvd floodway is \$4,500,000. Update 2018- Purchase one of two properties left in the Lower Branch of the Little Beaver Creek Flood Way, demolish the property, and dedicate as permanent open space.	City of Kettering	3	61	Mayor of Kettering	(FMA) Grant Program	11/2024 - 11/2029	Previous
37	To improve storm drainage systems in the Rio Grande neighborhood.	City of Trotwood	3	62	Mayor of Trotwood	(FMA) Grant Program	11/2024 - 11/2029	Previous
38	The New Lebanon storm drainage system was identified as in need of repairs.	City of Union	3	27	New Lebanon Municipal Manager	(FMA) Grant Program	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
<i>Hazardous Materials</i>								
39	Create hazard backup plan for wastewater facility that can be implemented.	City of Brookville	14	75	Mayor of Brookville	Existing Budget	11/2024 - 11/2029	New
40	Mitigate hazardous spills due to chemicals being transported or runoff into the soil.	Jefferson Township	14	73	Township Administration	(MWCD) Grant Program	11/2024 - 11/2029	New
<i>Multiple Hazards</i>								
41	Acquire generators for critical facilities in Montgomery County.	Montgomery County	1	6	County EMA	(BRIC) Grant Program	11/2024 - 11/2029	Previous
42	Acquire generators for critical facilities in the City of Dayton.	City of Dayton	1	7	Mayor of Dayton	(BRIC) Grant Program	11/2024 - 11/2029	Previous
43	Acquire generators for critical facilities.	City of Brookville	1	82	Mayor of Brookville	(BRIC) Grant Program	11/2024 - 11/2029	New
44	Complete an Environmental impact study due to Solar Farm companies wanting to do business withing Jefferson Township.	Jefferson Township	1	10	Mayor of Township	(EMPG) Special Project Grants	11/2024 - 11/2029	New
45	Contingency plans for checking-in on the shut-in and frail elderly neighbors. Educate the public to encourage the public to create contingency plans.	Montgomery County	1	12	MCOEM, Mitigation Planning Team	Existing Budget	11/2024 - 11/2029	Previous
46	Develop and distribute information about risks associated with the identified natural disasters affecting the County.	Montgomery County	1	13	MCOEM	Existing Budget	11/2024 - 11/2029	Previous
47	Develop and distribute informational brochures on the types of homeowner's hazard insurance, e.g. flood, fire, earthquake, etc. Explaining what is required and what is not but should be.	Montgomery County	1	14	MCOEM	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
48	Educational campaign promoting the usage of tone-activated weather radios.	Harrison Township	1	15	Harrison Township Trustees	Existing Budget	11/2024 - 11/2029	Previous
49	Emergency generators for all City buildings	City of Trotwood	1	2	Mayor of Trotwood	Existing Budget, Urban Canopy Restoration Grant	11/2024 - 11/2029	New
50	Encourage local jurisdictions to acquire electric generators	Montgomery County	1	17	MCOEM, Jurisdictional Representatives	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
51	Encourage utility companies to hire tree trimming contractors who are capable of a more citizen friendly trimming service	Montgomery County	1	24	MCOEM, Mitigation Planning Team	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
52	Ensure that city's critical facilities are equipped with the capability to be connected to one of the city's portable emergency generators via a transfer switch (Public Works facility, Parks Maintenance Facility, and Vandalia Seniors Center facility). This is the last phase of a multi-year project that in recent years has been deferred. This project would be considered as "in the planning stage".	City of Vandalia	1	26	Vandalia City Council	(BRIC) Grant Program	11/2024 - 11/2029	Previous
53	Identified a need for updating the siren alert system for severe weather in the City of Kettering.	City of Kettering	1	8	Mayor of Kettering	Existing Budget	11/2024 - 11/2029	Previous
54	Identified need for the comprehensive Severe Weather Package and Fire Safety House. As a result, the city is in the planning process to obtain funding to acquire a mobile educational trailer.	City of Englewood	1	18	Mayor of Englewood	(BRIC) Grant Program	11/2024 - 11/2029	Previous
55	Identified the need to purchase and install power generators and power hookups for the severe weather shelters located in the public schools.	City of Englewood	1	3	Mayor of Englewood	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
56	Improvements at Emergency Operations Center to serve as second site for data connections and business continuity.	City of Miamisburg	1	22	Mayor of Miamisburg	Existing Budget	11/2024 - 11/2029	New
57	Increase Preparedness for Personnel Deployment	City of Centerville	1	11	Christine Smart, Centerville Police Department	(BRIC) Grant Program	11/2024 - 11/2029	Previous
58	Electric generator.	Jefferson Township	1	16	Jefferson Township Fire Department	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
59	Install Generators at two Township office buildings	Harrison Township	1	4	Harrison Township Trustees Township	Existing Budget	11/2024 - 11/2029	Previous
60	Installation of electronic storm window shutters for the Emergency Operations Center.	City of Centerville	1	28	Mayor of Centerville	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
61	Installation of electronic storm window shutters for EOC.	City of Brookville	1	31	Mayor of Brookville	Existing Budget	11/2024 - 11/2029	New



2024 Montgomery County Natural Hazard Mitigation Plan

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
62	Launch educational campaigns through public/government cable channels and newsletters, websites, street festivals, libraries, school functions, etc.	Montgomery County	1	23	MCOEM	Existing Budget	11/2024 - 11/2029	Previous
63	Make the County Natural Hazard Mitigation Plan available to the public by publishing the plan on public website(s).	Montgomery County	1	19	MCOEM, Local Jurisdictions Mayors/Managers/Trustees, and Mitigation Planning Team	Staff Time	11/2024 - 11/2029	Previous
64	Public information campaign conducted by Montgomery County, in coordination with the jurisdictions, to inform and educate the citizens of Montgomery County of the 13 identified hazards and the risks affecting the jurisdictions in Montgomery County.	City of Brookville, City of Centerville, City of Clayton, City of Dayton, City of Englewood, City of Germantown, City of Huber Heights, City of Kettering, City of Miamisburg, City of Moraine, City of Oakwood, City of Riverside, City of Trotwood, City of Union, City of Vandalia, City of West Carrollton, Village of Farmersville, Village of New Lebanon, Village of Phillipsburg, Butler TWP, Clay TWP, German TWP, Jackson TWP, Miami TWP, Perry TWP	1	1	MCOEM, Jurisdictional Mayors, Managers and Trustees, Oakwood Fire Department	Existing Budget	11/2024 - 11/2029	New
65	Safe room reinforcement for the Emergency Operations Center.	City of Centerville	1	30	Mayor of Centerville	(BRIC) Grant Program	11/2024 - 11/2029	Previous

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
66	School window blast guards.	City of Centerville	1	29	Mayor of Centerville	(BRIC) Grant Program	11/2024 - 11/2029	Previous
67	Select locations, conduct site surveys, and implement city cameras to provide additional monitoring of weather conditions along the western boundary of the city. This will allow for earlier warning to the community of approaching storms and their locations.	City of Englewood	1	5	Mayor of Englewood	Existing Budget	11/2024 - 11/2029	New
68	Technological improvements at Emergency Operations Centers to improve connectivity with first responders.	City of Englewood	1	21	Mayor of Englewood	Existing Budget	11/2024 - 11/2029	New
69	Work with all jurisdictions on filling in gaps and strengthening capabilities in enacting mitigation strategies.	City of Englewood, City of Miamisburg, City of Trotwood	1	20	Mayors of Jurisdictions	Existing Budget	11/2024 - 11/2029	Previous
70	Identified the need to purchase and install power stations for the City's severe weather shelters. The city also identified the need to acquire power hookups for the following potential severe weather shelters: Union School and Two City owned buildings at 216 Shaw Rd.	City of Union	1	70	Mayor of Union	Existing Budget	11/2024 - 11/2029	Previous
71	Montgomery County EMA, and the Core Planning Committee, consisting of leadership from participating jurisdictions, will work with the top-elected officials and authorities within their jurisdictions to integrate the hazard mitigation plan into the relevant existing and future planning mechanisms and capabilities as listed in Table 3.3.1 of the plan.	Montgomery County	1	25	County EMA	Existing Budget	11/2024 - 11/2029	Previous
<i>Severe Summer Weather</i>								
72	Distribute NOAA Weather Radio featuring SAME technology to Very Low Income and Extremely Low-Income Households.	Montgomery County	4	65	MCOEM	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
73	Identified a need for replacing the severe weather alerting and siren system	City of Kettering	4	80	Mayor of Kettering	Existing Budget	11/2024 - 11/2029	New

#	Mitigation action	Community	Hazard Priority	Action Priority	Lead Agency	Funding Source	Start/End	Status
74	Identified a need to educate the public about the dangers when driving a vehicle in the snow or fog and intend to develop and launch an educational campaign for the public.	Butler Township	5	68	Butler Township Trustees	Existing Budget	11/2024 - 11/2029	Previous
75	Identified the need to purchase and install tire chains for all emergency response vehicles.	Butler Township	5	69	Butler Township Trustees	(EMPG) Special Project Grants	11/2024 - 11/2029	Previous
<i>Severe Winter Weather</i>								
76	Public Information Campaign about winter storm preparedness.	City of Trotwood	5	76	Mayor of Trotwood	Staff Time	11/2024 - 11/2029	Previous
77	Snow Emergency Route Information and Public Education Campaign	Jefferson Township	5	66	Jefferson Township Trustees	Staff Time	11/2024 - 11/2029	Previous
<i>Tornadoes</i>								
78	Identified the need for tornado shelters within their community and in partnership with Jackson Township are planning a tornado shelter on E. Walnut Street.	Village of Farmersville, Jackson Township	2	32	Farmersville Mayor / Jackson Township Trustees	HMGP Grant	11/2024 - 11/2029	Previous
79	Identified the need for tornado shelters within their community.	Clay Township	2	33	Clay Township Trustees	Staff Time	11/2024 - 11/2029	Previous
80	Seek funding to construct tornado safe rooms in public areas and neighborhoods without basements	Montgomery County	2	74	MCOEM	Staff Time	11/2024 - 11/2029	Previous
81	Seek funding to construct tornado safe rooms in public areas and neighborhoods without basements for City of Germantown.	City of Germantown	2	34	Germantown Administration and German Township Board of Trustees	HMGP Grant	11/2024 - 11/2029	Previous
82	Seek funding to construct tornado safe rooms in public areas and neighborhoods without basements in Montgomery County	Montgomery County	2	35	MCOEM, Jurisdictional Representatives	Staff Time	11/2024 - 11/2029	Previous
83	Vandalia has identified the need for an additional tornado siren. This project is currently in the planning process.	Cit of Vandalia	2	36	Vandalia City Council	Staff Time	11/2024 - 11/2029	Previous

6 | Schedule & Maintenance

6.1 Participation Overview

The Montgomery County Hazard Mitigation Plan will be adopted by all jurisdictions in Montgomery County, except the City of Carlisle, City of Springboro, and the Village of Verona. These jurisdictions are covered under other County's' Hazard Mitigation Plans. After the jurisdictions have adopted the plan, their signed resolutions or ordinances will be added to the plan in **Appendix G**.

In addition, Montgomery County EMA, and the Core Planning Committee, consisting of leadership from participating jurisdictions, will work with the top-elected officials and authorities within their jurisdictions to integrate the hazard mitigation plan into the relevant existing and future planning mechanisms and capabilities as listed in **Table 3.1.1** of the plan.

6.2 Plan Maintenance and Continued Public Involvement

The public will continue to provide feedback on the Plan, as the Plan will be available through the Montgomery County Emergency Management Agency and Ohio Emergency Management Agency websites. Montgomery County will provide access to the Plan to all county, municipal, and township offices, and will make the Plan available in hardcopy and electronic format to the public as appropriate. The Montgomery County EMA Director will post notices of any meetings for updating and evaluating the Plan, using the usual methods for posting meeting announcements in the county to invite the public to participate. All meetings will be open to the public.

An annual review process will be hosted by the Montgomery County EMA at least once a year. The annual review will include providing updates on mitigation actions, determining which mitigation actions to implement, updates on changes in hazard risks, suggestions for new mitigation actions, suggestions on how to improve the effectiveness of the Plan and the planning process, and any other information the county, municipal, or township representatives decide to share.

6.3 Previous Integration Efforts

Local governments play a major role in enforcing and implementing mitigation strategies because their daily operations guide the development of the communities in Montgomery County. Every Village in Montgomery County has a planning commission or a zoning board that deals with development and growth issues in their jurisdiction, referencing regulations, development plans, and mitigation strategies as they make decisions. These jurisdictions are small and have limited full-time staff, so the County as an organization provides strong leadership and oversight of economic development, community development, and land use planning. Many local officials wear numerous hats as they guide, direct, and facilitate local growth and development through regulation. Mitigation efforts are considered simultaneously with building code enforcement, zoning regulations, and land use rules at the county level. There is significant overlap between county officials when it comes to growth and development, including plan approval, issuance of permits, and occupancy approval responsibilities.

Montgomery County also has a Floodplain Manager who works with the Montgomery County Engineer to help plan, approve, modify, and regulate new facilities, subdivisions, and neighborhoods not only in the context of building codes, but also with consideration for flood risk. They also collaborate to be sure that new structures are not placed within flood risk zones without taking compensatory measures, like elevation, as early as the site development stage of construction. The Montgomery County Engineer works with the Montgomery County Auditor to manage the floodplain mapping and parcel identification and documentation by developing and maintaining GIS mapping. The Montgomery County Engineer also ensures that mitigation actions, like elevation, are properly included in the submitted building and occupancy permits during the approval process. The Montgomery County Engineer is also responsible for county ditch maintenance, which ties the County Engineer's office to the Montgomery County Surface Water Management District, as well as the Farm Service Agency

director, as agricultural drainage concerns are shared and resolved. These officials work with the Floodplain Manager to check and evaluate the floodplain maps as introduced by FEMA to ensure accuracy through the map adoption process.

6.4 Future Integration Efforts

Because local government plays a key role in the execution and implementation of mitigation strategies, each community will be responsible for understanding which items they are accountable for implementing. Annually, jurisdictions and responsible agencies should provide a status update for each mitigation action that is under their purview. This meeting will be where the jurisdictions and responsible parties assess the implementation and effectiveness of the hazard mitigation plan. This meeting should coincide with the budget process so that future funding sources can be determined and set aside for actions slated for that particular year. This meeting will also be available to the public. Additionally, each jurisdiction and the County will review the Hazard Mitigation Plan during other planning processes, such as development of comprehensive plans or capital improvement plans and incorporate appropriate goals and mitigation actions into such documents.

Additionally, the County and its participating jurisdictions will make a concerted effort to integrate the Hazard Mitigation Plan and its mitigation actions into existing plans and regulations, such as comprehensive plans, capital improvement plans, zoning codes and subdivision regulations, parks and open space plans, active shooter plans, and emergency operations plans.

Specifically, Montgomery County should have an Emergency Operations Plan. The EOP should facilitate integration of mitigation into response and recovery activities where appropriate, so key staff responsible for administering and updating the EOP should coordinate with the Core Planning Committee to identify integration areas and perform them. For the jurisdictions with floodplain regulations (Montgomery County and all jurisdictions), this Plan includes an action to “develop a floodplain management plan and update it regularly” so as floodplain regulations are reviewed and updated, the local floodplain coordinator(s) should continue to participate in the National Flood Insurance Program and should keep their maps updated. The Core Planning Committee should also engage the local floodplain coordinators and include them in their annual meetings for coordination, support, and to ensure this action is being met. For the zoning and land use regulations, this plan can be integrated in several ways. When zoning and/or land use regulations are reviewed and updated, related to flooding and dam failure, potential impact areas should be designated for limited to no development; and for landslides and land subsidence, land bordering waterways should either be left free of development or be reinforced to resist erosion. The Core Planning Committee should also engage the staff involved in administering and updating zoning codes and land use regulations and include them in their annual meetings for coordination, support, and assistance in integrating these recommendations from the plan.

The County and all jurisdictions have the staff and authority to implement the mitigation actions found in this plan. The County and all jurisdictions have the capabilities to grow their capacities in completing/implementing the mitigations actions in **Table 5.2.1**.

6.5 Updating the Plan

The Hazard Mitigation Plan must be updated within five years and re-adopted by the County and all participating jurisdictions to maintain compliance with federal regulations and ensure eligibility for certain federal mitigation grant funds. Montgomery County will defer meeting HHPD requirements for their 2024 Hazard Mitigation Plan and will amend them when/where necessary. Montgomery County will identify any necessary modifications to the Plan, including changes to mitigation goals and actions that should be incorporated into the next update. The Montgomery County EMA Director and the County Commissioners will initiate the process of updating the Plan two years before the expiration of



this Plan, plus one year for the grant application process in accordance with federal guidelines to meet state and federal deadlines.

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

AUTHORIZING THE CITY MANAGER TO CONTINUE PARTICIPATION IN THE MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN IN CONJUNCTION WITH THE MONTGOMERY COUNTY OFFICE OF EMERGENCY MANAGEMENT.

WHEREAS, there currently exists between the City of Huber Heights, Ohio and the Board Of Commissioners of Montgomery County, Ohio, an agreement that Montgomery County, through its Office of Emergency Management, shall provide emergency management assistance to the City in conjunction with a countywide coordinated program; and

WHEREAS, through this countywide coordinated program, the Montgomery County Office Of Emergency Management has developed the 2024 Montgomery County Natural Hazard Mitigation Plan that includes all hazards to which Montgomery County and its municipalities are susceptible as per Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act; and

WHEREAS, goals, objectives, and strategies to mitigate against the hazards that have been identified in Montgomery County, including the City of Huber Heights have been developed; and

WHEREAS, mitigation measures for the City and surrounding areas have bene analyzed and prioritized; and

WHEREAS, the 2024 Montgomery County Natural Hazard Mitigation Plan has been reviewed.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The City Manager is hereby authorized to adopt and implement the actions prescribed in the 2024 Montgomery County Natural Hazard Mitigation Plan, which is on file in the Office of the Director of the Montgomery County Office Of Emergency Management and is on file in the Office of the Clerk Of Council.

Section 2. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 3. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

AI-10693

Topics Of Discussion N.

Council Work Session

Meeting Date: 03/04/2025

Opposition Resolution - Tax Exempt Bonds For City Use

Submitted By: Rachael Dillahunt

Department: City Manager

Division: City Manager

Council Committee Review?: Council Work Session

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: In Process

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Opposition Resolution - Tax Exempt Bonds For City Use

Purpose and Background

The federal government has considered removing the tax exemption on municipal bonds to generate additional revenue, as taxing bond interest could bring in billions of dollars. The federal government has also argued that the exemption disproportionately benefits high-income investors while reducing potential federal tax income. The last time this issue was considered was during the Tax Cuts And Jobs Act (TCJA) of 2017; however, the provision to eliminate the exemption was not included in the final enacted legislation. City Staff strongly support preserving the federal tax exemption for municipal bonds, recognizing the vital role in funding essential infrastructure projects such as roads, bridges, utilities, water and sewer systems, and public facilities. These tax-exempt bonds enable the City to secure affordable financing, reducing borrowing costs and minimizing the financial burden on residents. Without this exemption, borrowing would become significantly more expensive. City Staff recommend passing a resolution urging the Ohio Congressional Delegation to advocate for the continued protection of municipal bond tax exemptions, ensuring the City can maintain and expand critical infrastructure while fostering economic growth and community well-being.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

Resolution

CITY OF HUBER HEIGHTS
STATE OF OHIO

RESOLUTION NO. 2025-R-

DECLARING SUPPORT FOR THE PRESERVATION OF THE FEDERAL TAX
EXEMPTION OF MUNICIPAL BONDS.

WHEREAS, the tax-exempt municipal bond market is a widely used source of capital for states, local governments, tribes, territories, and non-profit borrowers that finances a tremendous share of the nation's public infrastructure; and

WHEREAS, state and local governments finance about three-quarters of the public infrastructure in the United States and use tax-exempt bonds to do so, with the federal government providing only about one-quarter of the investment; and

WHEREAS, federal tax exemption for municipal bonds, dating back to the 1800s and incorporated into the modern tax code in 1913, has been crucial for state and local governments to affordably finance critical infrastructure projects; and

WHEREAS, tax-exempt bonds offer borrowers to achieve a multiplier effect of 2.11, meaning that for every dollar, borrowers achieve \$2.11 in borrowing cost savings thereby demonstrating the efficiency and effectiveness of this exemption in facilitating infrastructure investment; and

WHEREAS, tax-exempt bonds provide for essential infrastructure projects, such as roads, bridges, utilities, broadband, water and sewer systems, and hospitals, which are vital to the health and well-being of our community such that without such bonds, the cost of borrowing would be more expensive thereby causing an increase in taxes and fees that would place an undue burden on taxpayers; and

WHEREAS, the Huber Heights City Council finds and determines that tax-exempt municipal bonds provide an opportunity for economic development along its path, better facilitate the movement of agriculture products, equipment, and other goods, and increase safety.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Huber Heights, Ohio that:

Section 1. The Huber Heights City Council hereby encourages the Ohio Congressional Delegation to assist the City of Huber Height, Ohio by preserving the tax-exempt status of municipal bonds by supporting and ensuring the protection of the federal tax exemption of municipal bonds.

Section 2. Copies of this Resolution shall be furnished to all members of the Ohio Congressional Delegation.

Section 3. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Resolution were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 4. This Resolution shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

AI-10695

Topics Of Discussion 0.

Council Work Session

Meeting Date: 03/04/2025

City Code - Supplement 21 - Adopting Ordinance

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work Session **Date(s) of Committee Review:** 03/04/2025

Audio-Visual Needs: None **Legal Review:** Not Needed

Emergency Legislation?: No **Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

City Code - Supplement 21 - Adopting Ordinance

Purpose and Background

This ordinance is to adopt Supplement 21 to the City Code for the period of October 1, 2024 to December 31, 2024. Appropriate legal notice of this ordinance has been advertised as required by the Huber Heights City Charter.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

Ordinance

CITY OF HUBER HEIGHTS
STATE OF OHIO

ORDINANCE NO. 2025-O-

APPROVING THE EDITING AND INCLUSION OF CERTAIN ORDINANCES AND/OR RESOLUTIONS AS PARTS OF THE VARIOUS COMPONENT CODES OF THE CITY CODE OF HUBER HEIGHTS, OHIO; PROVIDING FOR THE ADOPTION AND PUBLICATION OF NEW MATTER IN THE UPDATED AND REVISED CITY CODE AS SUPPLEMENT 21; AND REPEALING ORDINANCES AND RESOLUTIONS IN CONFLICT THEREWITH.

WHEREAS, Municipal Code Corporation has completed its updating and revision of the City Code of Huber Heights, Ohio within Supplement 21; and

WHEREAS, certain provisions within the City Code of Huber Heights, Ohio were changed to conform with current State law as required by the Ohio Constitution; and

WHEREAS, various resolutions and/or ordinances of a general and permanent nature have been passed by the City Council which should be included in the City Code of Huber Heights, Ohio.

NOW, THEREFORE, BE IT ORDAINED by the City Council of Huber Heights, Ohio that:

Section 1. The resolutions and/or ordinances of the City of Huber Heights, Ohio, of a general and permanent nature, as edited, revised, codified and re-codified, rearranged and consolidated into component codes, titles, chapters and sections within Supplement 21 to the City Code of Huber Heights, Ohio for the period of October 1, 2024 to December 31, 2024, a copy of which is available for copying and inspection in the Office of the Clerk of Council, and incorporated herein by this reference, are hereby approved and adopted.

Section 2. The provisions within the City of Huber Heights Code that mirror provisions as contained in the Ohio Revised Code as set forth within Supplement 21 to the City Code of Huber Heights, Ohio for the period of October 1, 2024 to December 31, 2024, a copy of which is available for copying and inspection in the Office of the Clerk of Council, and incorporated herein by this reference, are hereby approved and adopted to conform with current State law.

Section 3. All ordinances and resolutions or parts thereof that are in conflict or inconsistent with any provision of the new matter adopted in Section 1 or 2 of this ordinance are hereby repealed as of the effective date of this ordinance except as follows:

(a) The enactment of such sections shall not be construed to affect a right or liability accrued or incurred under any legislative provision prior to the effective date of such enactment, or an action or proceeding for the enforcement of such right or liability. Such enactment shall not be construed to relieve any person from punishment for an act committed in violation of any such legislative provision, nor to affect an indictment or prosecution therefor. For such purposes, any such legislative provision shall continue in full force notwithstanding its repeal for the purposes of revision and recodification.

(b) The repeal provided above shall not affect any legislation enacted subsequent to December 31, 2024.

Section 4. Pursuant to Section 5.08(B) of the Huber Heights City Charter, the Clerk of Council shall cause a notice of this proposed adopting Ordinance to be published by posting the notice for at least ten (10) days prior to Council's adoption on the City's website and in not less than three (3) public places within the City and no further publication shall be necessary. Such publication shall constitute sufficient notice of all new material contained therein.

Section 5. It is hereby found and determined that all formal actions of this Council concerning and relating to the passage of this Ordinance were adopted in an open meeting of this Council and that all deliberations of this Council and of any of its Committees that resulted in such formal action were in meetings open to the public and in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

Section 6. This Ordinance shall go into effect upon its passage as provided by law and the Charter of the City of Huber Heights.

Passed by Council on the _____ day of _____, 2025;
_____ Yeas; _____ Nays.

Effective Date:

AUTHENTICATION:

Clerk of Council

Mayor

Date

Date

AI-10696

Topics Of Discussion P.

Council Work Session

Meeting Date: 03/04/2025

Arts And Beautification Commission Appointments - M. Gwinn/M. Knickerbocker

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work
Session

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

Board And Commission Appointments

* Arts And Beautification Commission - Appointments

Purpose and Background

The City's interview panel recommends the appointment of Melissa Gwinn and Mason Knickerbocker to the Arts and Beautification Commission for a term ending June 30, 2028. Background checks on Ms. Gwinn and Mr. Knickerbocker were processed through Human Resources.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

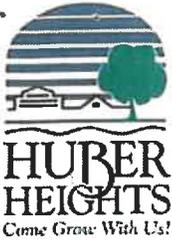
Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

Application - M. Gwinn

Application - M. Knickerbocker



6131 Taylorsville Road
Huber Heights, Ohio 45424
Phone: (937) 233-1423
Fax: (937) 233-1272
www.hhoh.org
An Equal Opportunity Employer

Application For City Boards And Commissions

Received - Clerk of Council
JAN 10 10 25 AM '03

Qualified applicants are considered for all positions without regard to race, color, religion, sex, national origin, marital or veteran status, or disability.

PLEASE COMPLETE ALL SECTIONS AND EACH QUESTION COMPLETELY AND ACCURATELY

BOARD OR COMMISSION APPLIED FOR: Arts and Beautification Commission	DATE APPLIED: 1/9/2025
---	----------------------------------

Gwinn	Melissa	Kay
Last Name	First Name	Middle Name
7411 Brandtvista Ave.,	Huber Heights,	OH
Address	City	State
		45424
		Zip Code
832-741-0847	mkgwinn@aol.com	
Phone Number	Email Address	

EDUCATION

	SCHOOL	COURSE OF STUDY OR DEGREE EARNED
HIGH SCHOOL	Brownsburg HS, Indiana	HS diploma
COLLEGE	Indiana State University	BS
GRADUATE SCHOOL	Indiana State University (M.S.)	Masters (Library Science)
OTHER (SPECIFY)		

COMMUNITY INVOLVEMENT

Please list all civic, community, or non-profit organizations to which you have belonged or currently do belong, and your dates of service.

ORGANIZATION	DATES OF SERVICE
Southwest Artisan Society Fort Bend County Fair - Creative Arts Dept. - Visual Arts	~ 5 years 2006-2011
Lone Star Art Guild	~ 2 years ~ 2009
Madison Al. Street Festival (organized Parade)	~ 1997
Girl Scouts Service Unit Manager; Troop Leader (etc)	~ 1994 - 1997
Huntsville Obedience Club	~ 1994 - 1996

EMPLOYMENT HISTORY

NAME OF EMPLOYER	POSITION(S) HELD	DATES OF EMPLOYMENT
Darton Metro Library	Branch Library Manager (Northmont)	8/1/21 - 1/11/25
Houston Public Library	Branch Library Manager	2003 - July 2001
Schafer Corp - Alabama	Analyst	1997
New Technology		~ 1994 - 1996
Citicorp	Corporate	~ 1984 - 1986

STATEMENT OF INTEREST

Please tell us why you are interested in serving on this board or commission.

Please see attached letter.

Greetings,

I have become aware of vacancies on the **Huber Heights Arts and Beautification Commission**. I would like to submit my application for consideration.

I have recently retired from a long career in managing libraries. I was a Library Branch Manager in public libraries for 22 years. In addition to managing the operations of the location: I did outreach to the community; and I developed/implemented library programs and community events. During that time, I've volunteered with various organizations while living in different parts of the country, and have worked along-side with many diverse volunteers.

Now that I'm retiring, I find that I can devote more time to do volunteer activities that I enjoyed. I was particularly involved in the visual arts. I was the treasurer and membership coordinator for the Southwest Artisan Society (SAS) in Richmond Texas. For SAS, I was on the team that coordinated several art exhibits. I did registration, set-up, hung art, ordered and hung ribbons, and attended openings. This club was affiliated with the Lone Star art Guild, which I participated in for the Regional Art Show by doing registration and exhibit set-up for one year. I also was one of a four-person team who organized the Visual Arts for the Creative Arts Department of the Fort Bend County Fair. I also judged children's artwork in a separate department. While living in Madison, Alabama I was heavily involved with Girl Scouts. I was a Service Unit Manager, a Troop Leader, an adult trainer and increased membership in my Service Unit.

I have been looking for volunteer opportunities since deciding to retire. I saw the need for a position on the Arts and Beautification Commission, so I thought I'd apply. Hopefully my assistance will be useful.

Thank you for your consideration.

Regards,

A handwritten signature in black ink, appearing to read 'Melissa Gwinn', written in a cursive style.

Melissa Gwinn
832-741-0847

REQUIREMENTS AND APPLICANT STATEMENT

Are you at least 18 years of age? Yes No

Do you currently reside in the City of Huber Heights? Yes No

Have you resided in the City of Huber Heights for at least one year prior to making this application? Yes No

Are you a registered voter? Yes No

Are you willing to sign a release to allow the City of Huber Heights to perform a background screening and criminal records check? Yes No

I certify that all of the information furnished in this application and its addenda are true and complete to the best of my knowledge. I understand that the City of Huber Heights may investigate the information I have furnished and I realize that any omissions, misrepresentation or false information in this application and/or its addenda may lead to revocation of any volunteer appointment.

I hereby acknowledge that I, voluntarily and of my own free will, have applied for a volunteer position with the City of Huber Heights with the understanding that the City may use a variety of screening procedures to evaluate my qualifications and suitability for appointment. I have been advised that these screening procedures might include, but are not limited to, interviews, criminal record checks, driving records checks and reference checks. I also acknowledge that any such screening procedures, as reasonably required by the City of Huber Heights, are prerequisites to my appointment to a volunteer position with the City of Huber Heights.

In addition, I also hereby understand that the City of Huber Heights cannot guarantee the confidentiality of the results of, or information obtained through the aforementioned screening procedures. Decisions of the Ohio Supreme Court regarding the Ohio Public Records Act indicate that, with certain enumerated exceptions, records maintained by a governmental entity are a matter of public record and, should a proper request be made by a member of the public for such records, the governmental entity would be required to make such records available to that member of the public within a reasonable time. Additionally, all information furnished in this application is subject to disclosure under the Ohio Public Records Act.

Therefore, in consideration of my application being reviewed by the City of Huber Heights, under no legal disability, and on behalf of my heirs and assigns, hereby release and agree to hold harmless the City of Huber Heights and any of its agents, employees, or related officials from any and all liability, whatever the type and nature resulting from the administration of any such screening procedures and/or release of the results therefrom.

Signature

Date

For Administrative Use:

Applicant Interview Date/Time: _____

Application Status: _____



6131 Taylorsville Road
 Huber Heights, Ohio 45424
 Phone: (937) 233-1424
 Fax: (937) 233-1272
 www.hhoh.org
 An Equal Opportunity Employer

Application For City Boards And Commissions

Received - Clerk of Municipal
 JAN 21 '25 PM 4:50

Qualified applicants are considered for all positions without regard to race, color, religion, sex, national origin, marital or veteran status, or disability.

PLEASE COMPLETE ALL SECTIONS AND EACH QUESTION COMPLETELY AND ACCURATELY

BOARD OR COMMISSION APPLIED FOR: ARTS & BEAUTIFICATION COMMISSION	DATE APPLIED: JAN. 17, 2025
---	---------------------------------------

Last Name	First Name	Middle Name	
KNICKERBOCKER	MASON	SAY	
Address	City	State	Zip Code
5911 LEYDEN LANE	HUBER HEIGHTS	OHIO	45424
Phone Number (937) 674-2153	Email Address	MASON.KNICKERBOCKER@MYHHHS.ORG	

EDUCATION

	SCHOOL	COURSE OF STUDY OR DEGREE EARNED
HIGH SCHOOL	BEAVERCREEK HIGH SCHOOL	DIPLOMA W/ HONORS
COLLEGE	WRIGHT STATE	SOCIAL SCIENCE EDUCATION, BA YOUTH & COMMUNITY ENGAGEMENT MINOR
GRADUATE SCHOOL		
OTHER (SPECIFY)		

COMMUNITY INVOLVEMENT

Please list all civic, community, or non-profit organizations to which you have belonged or currently do belong, and your dates of service.

ORGANIZATION	DATES OF SERVICE
BOY SCOUTS OF AMERICA	YOUTH 2015-2019 ADULT 2019-2020
COLLEGE DEMOCRATS	2022-2024 SECRETARY, PRESIDENT

REQUIREMENTS AND APPLICANT STATEMENT

Are you at least 18 years of age? Yes No

Do you currently reside in the City of Huber Heights? Yes No

Have you resided in the City of Huber Heights for at least one year prior to making this application? Yes No

Are you a registered voter? Yes No

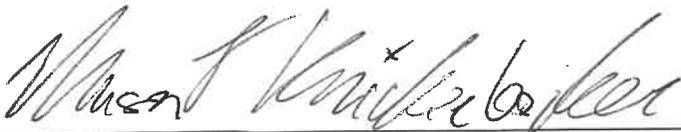
Are you willing to sign a release to allow the City of Huber Heights to perform a background screening and criminal records check? Yes No

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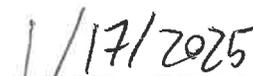
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Signature



Date

AI-10699

Topics Of Discussion

Council Work Session

Meeting Date: 03/04/2025

Culture And Diversity Citizen Action Commission Appointment - M. Honaker

Submitted By: Anthony Rodgers

Department: City Council

Council Committee Review?: Council Work Session

Date(s) of Committee Review: 03/04/2025

Audio-Visual Needs: None

Legal Review: Not Needed

Emergency Legislation?: No

**Motion/Ordinance/
Resolution No.:**

Agenda Item Description or Legislation Title

* Culture And Diversity Citizen Action Commission - Appointment

Purpose and Background

The City's interview panel recommends the appointment of Mia Honaker to the Culture and Diversity Citizen Action Commission for a term ending December 31, 2027. A background check was processed on Ms. Honaker by Human Resources.

Fiscal Impact

Source of Funds: N/A

Cost: N/A

Recurring Cost? (Yes/No): N/A

Funds Available in Current Budget? (Yes/No): N/A

Financial Implications:

Attachments

Application - M. Honaker



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Application For City Boards And Commissions

Received - Huber Heights
 FEB 25 12:52 PM '25

Qualified applicants are considered for all positions without regard to race, color, religion, sex, national origin, marital or veteran status, or disability.

PLEASE COMPLETE ALL SECTIONS AND EACH QUESTION COMPLETELY AND ACCURATELY

BOARD OR COMMISSION APPLIED FOR: Culture And Diversity Citizen Action Commission	DATE APPLIED: 01/28/2025
--	------------------------------------

Honaker	Mia		
Last Name	First Name		Middle Name
7261 Summerdale Dr.	Huber Heights	OH	45424
Address	City	State	Zip Code
937-694-0728	mia.honaker@wright.edu		
Phone Number	Email Address		

EDUCATION

	SCHOOL	COURSE OF STUDY OR DEGREE EARNED
HIGH SCHOOL	Wayne High School	High School Diploma
COLLEGE	Wright State University	Bachelor of Science in Organizational Leadership
GRADUATE SCHOOL	Wright State University	Master of Science in Leadership Development, Expected graduation date: April 2026
OTHER (SPECIFY)		

COMMUNITY INVOLVEMENT

Please list all civic, community, or non-profit organizations to which you have belonged or currently do belong, and your dates of service.

ORGANIZATION	DATES OF SERVICE
Asian American Council of Dayton	11/2005 to Present
City of Huber Height's Comprehensive Plan Committee	08/2022 to 02/2023
Huber Heights Culture & Diversity Citizen Action Commission	06/2021 to 02/2022
Ohio Consortium of Multicultural Centers in Higher Education	11/2005 to 05/2019

REQUIREMENTS AND APPLICANT STATEMENT

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Mia Honaker

Signature

01/28/2025

Date

For Administrative Use:

Applicant Interview Date/Time: _____

Application Status: _____

Mia Honaker

937-694-0728 | mnmhonaker95@gmail.com | www.linkedin.com/in/miahonaker

PROFILE

Accomplished administrative and programming coordinator with over 20 years of experience in creating and implementing inclusive excellence initiatives and programming, along with providing senior-level administrative support, in higher education. Proven track record in designing and executing programs that cultivate a strong sense of community and belonging. Highly skilled in managing complex projects, optimizing operations, and leading cross-functional teams to achieve organizational goals. Possesses exceptional interpersonal and organizational abilities, strong communication skills, and a proactive approach to problem-solving.

KEY SKILLS

- Event Planning
- Strategic Planning
- Budget Management
- Leadership Development
- Training Facilitation
- Advocacy and Mentoring
- Calendar Management
- Multi-tasking
- Detail Oriented
- Problem Solving
- Confidentiality
- Graphic Design Skills
- Grant Writing
- Microsoft Office Suite
- PeopleAdmin
- Banner System
- Chrome River

EDUCATION

Bachelor of Science in Organizational Leadership

Wright State University, Dayton, OH

12/2023

Master of Science in Leadership Development

Wright State University, Dayton, OH

**Expected
Graduation: 04/2026**

PROFESSIONAL EXPERIENCE

Coordinator of Inclusive Excellence Operations

Wright State University, Division of Inclusive Excellence, Dayton, OH

07/2024 – Present

- Develop and Facilitate division-level events, programming, and training sessions, ensuring alignment with organizational goals.
- Manage special projects, from defining objectives and scope to delivering results, serving as the division's project manager.
- Prepare and distribute internal communications, collaborating with stakeholders to ensure consistent messaging and timing.
- Create and conduct inclusive excellence training for students, staff, faculty, and external stakeholders.
- Coordinate divisional onboarding processes, including new hire training, documentation, and orientation materials.
- Author clear and compelling grant proposals to secure funding for division initiatives.

- Provide administrative support to the Vice President, including preparing executive reports and progress updates for the President's Council and Board of Trustees.
- Maintain divisional budgets and monetary transactions, ensuring financial accuracy and compliance.
- Hire, train, and supervise student workers, ensuring their alignment with division goals.
- Represent the Division of Inclusive Excellence in staff and project team meetings, follow up on outcomes, and track resulting activities and projects.
- Maintain departmental policies, operating procedures, and the division's website.

Teaching Assistant

05/2023 – 07/2023

Wright State University, Organizational Leadership Program, Dayton, OH

- Assisted in the development and implementation of lesson plans, providing academic support to students in introduction to leadership.
- Facilitated discussions, fostering a collaborative learning environment and enhancing student engagement.
- Graded assignments and exams, providing constructive feedback to support student growth and academic performance.
- Prepared and organized instructional materials.
- Conducted review sessions to help students prepare for exams and improve their grasp of key concepts.

Administrative Assistant to the Vice President for Inclusive Excellence

06/2021 – 07/2024

Wright State University, Division of Inclusive Excellence, Dayton, OH

- Provided senior-level support for projects, ensuring successful execution and alignment with division goals.
- Assisted the Vice President and division in planning and developing key programs.
- Managed the Vice President's calendar and coordinated travel arrangements.
- Designed communication materials for presentations, events, and marketing initiatives.
- Maintained the division's budget and prepared detailed expense reports.
- Coordinated search committees and oversaw new employee onboarding processes.

Interim Associate Director

05/2019 – 05/2021

Wright State University, Office of Latinx, Asian and Native American Affairs, Dayton, OH

- Developed and implemented programs and services aimed at increasing the recruitment and retention of Latino, Asian, and Native American students.
- Counseled and advised students, faculty, staff, alumni, and community leaders on academic and personal development matters.
- Provided strategic guidance to university leadership on initiatives targeting the Latino, Asian, and Native American campus communities.
- Managed the departmental budget and spearheaded fundraising efforts to support programmatic goals and resources.
- Supervised and mentored student staff and graduate assistants, fostering their professional growth and ensuring effective team collaboration.

Administrative Support Coordinator**11/2005 – 05/2019***Wright State University, Office of Latinx, Asian and Native American Affairs, Dayton, OH*

- Assisted in the planning, organizing, and execution of center events and programs, ensuring successful outcomes and high participant engagement.
- Monitored, reconciled, and maintained budget expenses, ensuring financial accuracy and adherence to allocated resources.
- Developed and designed marketing and promotional materials for the center, events, and student organizations to enhance visibility and attendance.
- Coordinated and scheduled meetings, appointments, and travel arrangements for professional staff and student leaders, facilitating smooth operations and efficient time management.

Divisional Office Manager**10/2000 – 11/2005***Specialized Alternatives for Families and Youth (SAFY) of Dayton, West Carrollton, OH*

- Piloted a new program for the Magellan Reporting System, contributing to system improvements and efficient data management.
- Transcribed recordings for on-site therapists, ensuring accurate and timely documentation of therapeutic sessions.
- Maintained and organized client files, ensuring all records were up-to-date and easily accessible.
- Managed and documented foster parent training and certification, ensuring compliance with relevant standards and requirements.
- Facilitated de-escalation training for foster parents, equipping them with skills to handle challenging situations effectively.

PROFESSIONAL & COMMUNITY INVOLVEMENT

Staff Senate**07/2020 – Present**

Treasurer, Wright State University

Asian American Council of Dayton**11/2005 – Present**

Secretary

Bias Incident Reporting Team (BIRT)**06/2022 – Present**

Co-Chair, Wright State University

Title IX Investigator**10/2023 - 12/2025**

Wright State University

Comprehensive Plan Committee**08/2022 – 02/2023**

Committee Member, City of Huber Heights

Culture & Diversity Citizen's Action Commission**06/2021 – 02/2022**

Commissioner, City of Huber Heights

WORDBridge Now, LLC
Advisory Board Member

01/2021 – 06/2021

Ohio Consortium of Multicultural Centers in Higher Education (OCMCHE) **11/2005 – 05/2019**
Executive Board Member, Wright State University

TRAININGS & CONFERENCES

- Wright State University:
 - Exceptional Service Training
 - Title IX Investigator Training
 - Run, Hide, Fight Training
 - Search Committee Training
 - GrantForward Workshop
 - Information Security Awareness Training
 - Environmental Health and Safety Training
 - Hazing Prevention 101
 - Red Flags Training
- Ohio State University's Kirwin Institute's Implicit Bias Module Series
- The University of South Florida Muma College of Business' Diversity, Equity and Inclusion in the Workplace Certificate
- National Conference on Race and Ethnicity in Higher Education
- Ohio State University's National Conference on Diversity, Race, & Learning
- University of Pittsburgh Diversity Forum
- SOCHE What's Next DEI Conference
- OCMCHE Fall and Spring Conference
- ACE Women's Network Leadership Conference

AWARDS & RECOGNITION

Student Leadership Awards, Advisor of the Year Nomination Division of Student Affairs, Wright State University	04/2023 & 04/2024
Employee Shout Out, Customer Service Division of Student Affairs, Wright State University	02/2024
Katie Deedrick Above and Beyond Award Division of Student Affairs, Wright State University	05/2018
President' Award for Excellence in Service Office of the President, Wright State University	07/2017
Wright Stuff Award Division of Multicultural Affairs and Community Engagement, Wright State University	08/2014